FAA Safety BRIEFING

November/December 2012

Your source for general aviation news and information

Small Airplane BIG WORLD

Federal Aviation Administration

www.faa.gov/news/safety_briefing/

The theme of the Nov/Dec 2012 issue of FAA Safety Briefing *is "Small Airplane, Big World." Articles explore the significance of general aviation on a more global scale and focus on the tools and resources that can help you operate safely beyond our borders.*

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Raymond H. LaHood *Secretary of Transportation*
Michael Huerta *Acting Administrator*
Margaret Gilligan *Associate Administrator for Aviation Safety*
John M. Allen *Director, Flight Standards Service*
Dennis Pratte *Acting Manager, General Aviation and Commercial Division*
Susan Parson *Editor*
Tom Hoffmann *Managing Editor*
James R. Williams *Associate Editor / Photo Editor*
Sabrina Woods *Assistant Editor*
Paul Cianciolo *Assistant Editor*
Will Daniel Muddsimmons *Assistant Copy Editor*
John Mitrione *Art Director*
Guy Tom *Designer*

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Comments or questions should be directed to the staff by:

- E-mailing: SafetyBriefing@faa.gov
- Writing: Editor, *FAA Safety Briefing*, Federal Aviation Administration, AFS-805, 800 Independence Avenue, SW, Washington, DC 20591
- Calling: (202) 385-9600
- Twitter: @FAASafetyBrief

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JOHN ALLEN
DIRECTOR, FLIGHT STANDARDS SERVICE

Jumpseat

Think Globally, Act Locally

It doesn't take a rocket scientist to understand that aviation is inherently global. And that means that aviation safety is a global challenge. That's one of the reasons that the United States works closely with its aviation partners in organizations like the International Civil Aviation Organization (ICAO). Though we sometimes find different ways to address a given safety issue, we all agree on the fundamental points.

One of those fundamental points of agreement is the need to grapple more effectively with the human element in aviation safety. There was a time when a significant number of aviation accidents could be attributed to a mechanical cause. Thanks to advances in technology and today's meticulous investigation of accidents, we now have both the means and the data to design fixes for many of yesterday's mechanical malfunctions.

It is a much tougher task to design fixes for human errors, especially in a system as complex as the one we operate today. History shows that even when we can design fixes for human error, humans have a remarkable ability to invent new mistakes, or find new ways of making old mistakes.

SMS — Global Concepts, Local Actions

But that doesn't mean we should give up. On the contrary, there are certainly things we *can* do. A focus on the overall system, especially the human element, is why ICAO, the United States, and many other countries have embraced the concept of safety management systems, or SMS, on a global basis. Since SMS affects every part of the aviation industry, let me tell you why I believe SMS is not only the right thing to do, but also an essential "global" tool we need to guide our "local" (individual) actions in ways that will make our aviation system safer than ever.

Just in case you dismiss SMS as yet another layer of paper-generating bureaucracy, let's first take a minute to think about what a safety management system really is. Though we might have a different name for it, most of us use SMS all the time in many daily activities. Do you put your car keys in the same place at home? If so, that's your SMS to reduce the risk of losing them. Do you use a "to do" list, or maybe a reminder app on your smartphone? If so, that's your SMS to reduce the risk of overlooking important tasks.

If we use SMS for the little things in our daily lives, it stands to reason that we should make even greater use of such risk reduction techniques in aviation, where the stakes are so much higher. I often tell pilots that if you have a logbook for your airplane, you already have an aviation SMS. That simple document can be a tool to perform the three critical steps in any SMS: observe and record hazards; analyze and identify risks; eliminate or mitigate those risks. Using even something as simple as a logbook to take those three steps means that you are shifting from reliance on forensics — analyzing what already went wrong — to an approach that uses data analysis to show trends, and point to safety decisions that prevent the accident.

Though we might have a different name for it, most of us use SMS all the time in many daily activities.

Another aspect of SMS is the evolution of the regulatory function. It is not possible for the FAA to "inspect safety into the system," and it's clear that rote compliance with the letter of the law is not enough. Transition to SMS also means that the role of the regulator must evolve. We must realize that the focus of responsibility and accountability for safety rests with the certificate holder, and inspector-regulators must use data to find and focus on the areas of greatest risk. In addition, regulators must learn to use safety motivation approaches, not a reflexive reliance on the enforcement tool, as a means of promoting safety and building a healthier, safety-oriented relationship.

Aviation offers a significant, indeed essential, service to the world's economies and cultures. Given that fact, governments and operators of all sizes must embrace SMS as a means to think globally, act locally, and help assure safety in this critical sector.

ATIS Aviation News Roundup

Pilot's Bill of Rights

In light of the new Pilot's Bill of Rights, signed into law on August 3, 2012, the FAA's website now has a section to help pilots submit information requests (www.faa.gov/pilots/rights). An individual who is the subject of an investigation related to the approval, denial, suspension, modification, or revocation of an airman certificate may follow that link to find out what information the FAA needs to process a request for air traffic data, like recordings from a control tower. The FAA website also includes an email address — *AirmenDataRequest@faa.gov*— for the airman to send his or her request for contractor air traffic data. Keep in mind that air traffic data is only stored for short periods (5 to 45 days) so it is important to submit a data request as expeditiously as possible.

In addition to providing access to ATC information, the new Pilot's Bill of Rights also requires the FAA to improve airman enforcement proceedings, simplify the Notices to Airmen (NOTAM) system, and review its medical certification process and forms. For more details on the bill, go to http://www.govtrack.us/congress/bills/112/s1335#.

LPVs — Not Just for North America

In the United States and Canada, the number of new WAAS Localizer Performance with Vertical guidance (LPV) approach procedures continues to grow, but North America is not the only region of the world where LPVs are available. Europe is also developing and implementing LPVs made possible by the European Geostationary Navigation Overlay Service (EGNOS) Safety of Life (SoL) service.

The number of European LPVs continues to increase at a rapid rate. According to a list posted on the European Satellite Services Provider (ESSP) website (www.essp-sas.eu/) in September, there were 20 European LPVs. These included 16 in France, two in Switzerland, and two in the United Kingdom. More LPVs are planned for Europe with future locations including Austria, Switzerland, the Czech Republic, Germany, Spain, Finland, France, U.K., the Netherlands, Norway, Poland, Slovakia, and Sweden.

For more information on the status of GPS and WAAS-enabled approaches, be sure to check out the FAA's SatNavNews newsletter at http://go.usa.gov/rUQA.

Last Call for General Aviation Activity Survey

The FAA's annual General Aviation and Part 135 Activity Survey for calendar year 2011 is now well underway. Aircraft owners/operators who were selected to participate should have already received a postcard in the mail this past summer. If you have not yet replied, please do so no later than November 30, 2012, the final cutoff date for all survey responses.

This annual survey is the FAA's only source of information on the GA fleet. The data collected will include the number of hours flown and the ways people use GA aircraft. This data helps determine funding for infrastructure and service needs, assess the impact of regulatory changes, and measure aviation safety. The GA survey data also allows the FAA to track the success of its safety initiatives, identify areas for improvement, focus its resources, and better serve the GA community.

Aircraft owners can complete the survey online by using their N number to log in or by requesting that a survey form and postage-paid envelope be sent to them. Owners who are selected are urged to take the survey even if they did not fly their aircraft in 2011. Also, in order to maintain the integrity of the survey data, it is critical for owners to complete the survey using only 2011 data. If the exact information for a particular question is unknown, the survey asks owners to provide their best estimate.

All information provided for the survey will be used only for statistical purposes; it will not be published or released in any form that would reveal specific information reported by respondent. For questions, please contact the survey team at 888-672-4493 or by email at: 9-AVP-InfoAviationSurvey@faa.gov.

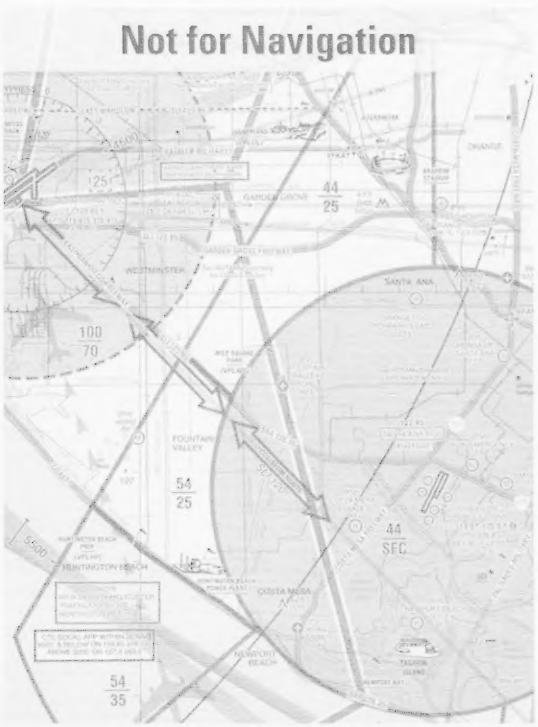
Prototype Nav Chart Hits LA Basin

What happens when low-level commercial airliners, general aviation aircraft, military jets, and helicopters all fly together in the same complex Class B airspace? It becomes a challenge to minimize the risk of midair collisions. To help pilots navigate in such airspace, the FAA and industry partners have come up with a solution to help pilots understand their responsibilities.

One such area is Los Angeles. A new prototype VFR navigational chart combines information from the existing Terminal Aeronautical Chart, VFR Flyway Planning Chart, and Helicopter Route Chart into a single product.

It is designed to be easy to read and navigate while preserving the necessary requirements and criteria. Although no decision has been made to replace or supplement the existing charts when placed into production, the FAA is currently sharing this prototype with stakeholders and soliciting input from users with how to proceed. This type of chart may be the new standard for other complex airspace in the future.

Go to AeroNav.faa.gov for more information about aeronautical navigational products.



Detail of Prototype Navigational Chart

FAASTeam Welcomes New Industry Member

The FAA Safety Team (FAASTeam) has gained a new partner within its team of industry members — the Popular Rotorcraft Association (PRA). A letter of understanding, signed on August 21, paves the way for greater cooperation and enhanced training opportunities between the two.

The PRA (www.pra.org) was started in 1962 and is devoted exclusively to homebuilt rotorcraft and gyroplanes. The PRA has grown to be a worldwide organization with members in more than 80 countries and sponsors an annual convention that's typically the largest gathering of homebuilt rotorcraft in the world.

As a FAASTeam Industry Member, PRA will have the opportunity to develop safety awareness training for all airmen, and provide support for both the WINGS and AMT Awards programs.

CFI Responsibility to TSA

With recent publicity about individuals on the "Do Not Fly List" receiving flight instruction, CFIs are reminded that they have certain responsibilities to fulfill before instructing a non-U.S. citizen. The Alien Flight Student Program (AFSP) was created to ensure that foreign students seeking training at flight schools regulated by the FAA do not pose a threat to aviation or national security. To comply with the program, candidates must create an AFSP account and log into the AFSP Candidate website www.flightschoolcandidates.gov to submit their background information and required documentation. Candidates seeking flight training are separated into one of four different categories, and will submit their request based on which is most applicable. Flight training providers are then notified and asked to validate the request before the candidate continues the clearance process needed to begin training.

A newsletter, legislation guidelines, frequently asked questions, a candidate application guide, and contact information for the AFSP are available at http://bit.ly/fH8awC. The regulation that concerns flight training for aliens can be accessed at http://bit.ly/Q9W2mn.

Takeoffs and Landings

Paul Cianciolo and Sabrina Woods

In August 2012, the *FAA Safety Briefing* team gained two vital new assets: Paul Cianciolo and Sabrina Woods. Both are new assistant editors and each brings a unique skill set to the team.

Cianciolo is an Air Force veteran with a diverse background in jobs including public relations, law enforcement, intelligence analysis, Web design, social media management, and entrepreneurism. He is a 16-year volunteer with the Civil Air Patrol and maintains proficiency in emergency management and search and rescue operations in the air and on the ground. Cianciolo holds a bachelor's degree in management.

Woods spent 12 years in the active duty Air Force where she served as an aircraft maintenance officer and an aviation mishap investigator. She continues to serve in the Air Force Reserves and has a master's degree in professional and technical writing and a master's degree in aeronautics with an emphasis in aviation safety.

Please join us in welcoming the newest members of the *FAA Safety Briefing* staff!

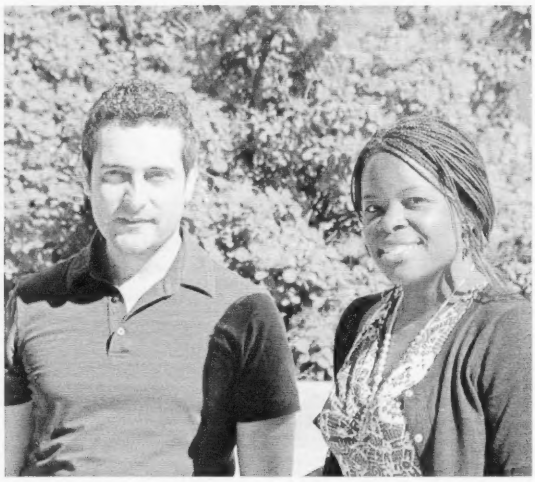


Photo by James Williams

Mel Cintron

On September 15, 2012, FAA General Aviation and Commercial Division Manager Mel Cintron bid a temporary farewell to Flight Standards to begin a 12-month detail as the new Transportation Counselor in Afghanistan. Among his new responsibilities will be capacity building, governance, and infrastructure development for all modes of transportation: ground, rail, and air.

Photo by James Williams

Cintron has been a driving force behind the FAA's Five-Year GA Safety Plan, a data-driven and consensus-based approach to analyze safety data and develop accident mitigation strategies.

"I've been extremely fortunate to work with so many talented and dedicated safety professionals over the past few years," says Cintron. "We've made progress in improving safety, and I attribute this not just to FAA interventions, but more critically to the GA community that has, and continues to be, the driving force with us."

Cintron looks forward to the challenges of his new overseas position, as well as the chance to integrate many of the same safety philosophies that have been successful at the FAA. "I will dearly miss my interaction with the GA community, but I feel confident that we have a solid foundation for success."

JAMES WILLIAMS

Say Altitude... in Meters?!

Money isn't the only thing that can change at the border. Depending on where you fly, you may find that feet become meters and inches of mercury become hectopascals.

As we focus on flying in a wider world outside the familiar boundaries of the United States, it pays to remember that there are other means of measurement. Just as our dollars are likely not legal tender elsewhere, our domestic units of measurement might also be left out. In fact, we are decidedly in the minority when it comes to using inches, feet, nautical miles, and knots. The International Civil Aviation Organization (ICAO), which sets standards and recommended practices for global aviation, uses the International System of Units, abbreviated as SI in accordance with its French name.

Under the SI, ICAO's standard unit of measure for altitude is the meter (m). Its standard for long distances is the kilometer (km). The airspeed reference is kilometers per hour (km/h). And you've probably already figured out that you will be buying liters (L) of fuel and measuring its weight in kilograms (kg).

But fear not, because many of our familiar terms (e.g., foot, knot, and nautical mile) are in ICAO's vocabulary. These terms are officially classified as Non-SI alternative units that are permitted for temporary use with the SI. But ICAO does, at some point, intend to end the use of the older imperial units. This intent is clearly conveyed by the title of Chapter 4 of Annex 5, *Termination of Use of Non-SI Alternative Units*. The introductory note states:

> *The non-SI units listed in Table 3-3 have been retained temporarily for use as alternative units because of their widespread use, and to avoid potential safety problems which could result from the lack of international coordination concerning the termination of their use. As termination dates are established by the Council, they will be reflected as Standards contained in this Chapter. It is expected that the establishment of such dates will be well in advance of actual termination. Any special procedures associated with specific unit termination will be circulated to all States separately from this Annex.*

So what does this mean for us? As discussed in "In the Know with ICAO" on page nine, Contracting States are not required to follow Annex procedures. To use different procedures, countries need only file a Notice of Difference with ICAO. Although some (including me) suspect that the United States will do just that in order to continue using imperial or customary units even after ICAO discontinues use of non-SI alternatives, we still need to be prepared to deal with SI units of measure if we venture outside the borders.

Something's Afoot

Have you ever wondered how we came to use "foot" as a unit of measure? The foot has had several definitions throughout history starting with, well, a foot. The problem with that was that human feet come in many sizes. Also, as people got bigger and taller through history, feet got bigger too. That meant that even the average foot size was something of a moving target. Nonetheless, the 12 inch (0.3048 meter) length of an official foot was codified in 1959.

A few other useful measures and conversions, rounded to the nearest whole or tenth:

- 100km/h = 54kts
- 1,000ft = 305m
- 1gal = 3.8L
- 1kg = 2.2lbs
- 1L of avgas = 1.6lbs
- 1 ton (U.S. measure) = 2,000lbs
- 1 tonne (metric) = 1,000kg = 2,205lbs

FREDERICK E. TILTON, M.D.
FEDERAL AIR SURGEON

Aeromedical Advisory

A Marathon ... Not a Sprint

When you hear the words "medical certification," your first thought may well go to that piece of paper you carry in your flight bag. While it is indeed an important document — you can't fly without it — the paper itself is only a small component in the process of medical certification. Your medical certificate means that you met the requirements for the specific class of medical that you applied for at the time of your exam, and that based on our research, you are likely to meet them for the length of your medical's validity under 14 CFR section 61.23. But the issuance of that certification is just the beginning of the process. It is perhaps more akin to the green flag than the checkered flag of a race.

In this metaphor, your medical exam is like a technical inspection for your body before the race. You then have to keep meeting those standards throughout the race, just as you must continue to meet your medical standards in order to exercise the privileges of your pilot and medical certificates. While your health isn't being measured to the millimeter or fraction of an inch like the highest forms of racing, you are still expected to ensure that you meet, to the best of your knowledge, the standard of the medical certificate you intend to exercise. This means a serious self-evaluation of your own condition before setting off on a flight.

You have almost certainly heard of the IM SAFE checklist, but how often do you actually pull it out before a flight and go through the items one at a time? Doing so helps ensure you don't overlooking anything.

- **I** Illness: Am I sick?
- **M** Medication: Am I taking any medications?
- **S** Stress: Am I under any stress?
- **A** Alcohol: Have I had anything to drink in the last 8 hours?
- **F** Fatigue: Am I tired and not adequately rested?
- **E** Eating: Have I eaten enough proper foods lately?

It's interesting to see how humans can rationalize. It's easy to scoff at the idea of flying when you are physically under the weather — "If I'm sick, of course I'm not going to fly." By actually going through the checklist, though, we may be able to ward off some of the rationalizations we otherwise tend to make when we really want to fly. For example: I've had a headache for the last couple of days, but I'm not really sick. I've been taking aspirin for my headache, but that's no big deal. Flying is my relaxation activity, so it's not stressful. So what if I've been pushing hard at work to finish up this project? That's why I had a beer last night, but that was 20 hours ago. I'm a little tired since I've been going in early and leaving late at work, but that's no big deal either. And no problem on food; I grabbed a burger from the drive-thru on my way to the airport.

While your health isn't being measured to the millimeter or fraction of an inch, you are still expected to ensure that you meet, to the best of your knowledge, the standard of the medical certificate you intend to exercise.

Do any of these phrases sound familiar? Do any of them strike you as a potential problem? Any one of those items might not be an issue by itself, but the combination of factors could construct the proverbial accident chain. The point is not to say that this kind of scenario is disqualifying, but it clearly warrants closer consideration.

And that's the point. Just as a series of small issues can combine to end our metaphorical race, a series of everyday life issues, even minor ones, can combine to result in tragedy. So while flying is fun, ensuring continued fitness to fly is absolutely critical to making sure the race has a happy ending.

Frederick E. Tilton, M.D., M.P.H., received both an M.S. and an M.D. degree from the University of New Mexico and an M.P.H. from the University of Texas. During a 26-year career with the U.S. Air Force, Dr. Tilton logged more than 4,000 hours as a command pilot and senior flight surgeon flying a variety of aircraft. He currently flies the Cessna Citation 560 XL.

Fast-track Your Medical Certificate

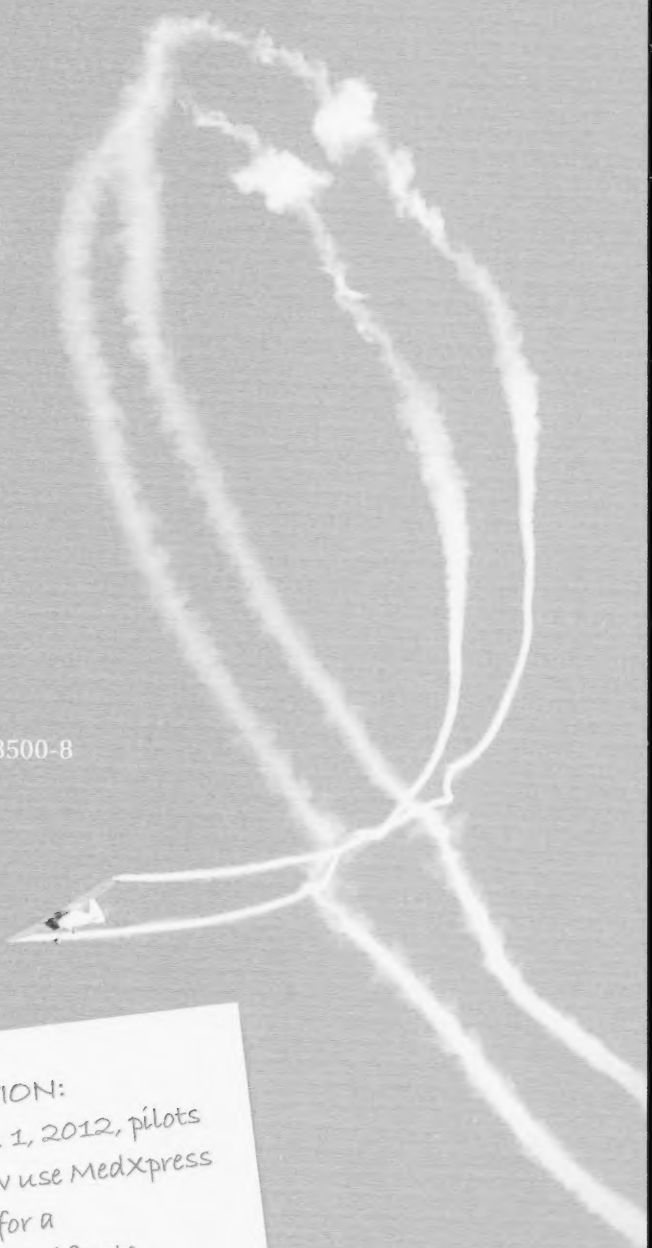
With FAA MedXPress, you can get your medical certificate faster than ever before.

Here's how: Before your appointment with your Aviation Medical Examiner (AME) simply go online to FAA MedXPress at https://medxpress.faa.gov/ and electronically complete FAA Form 8500-8. Information entered into MedXPress will be available to your AME to review prior to and at the time of your medical examination, if you provide a confirmation number.

With this online option you can complete FAA Form 8500-8 in the privacy and comfort of your home and submit it before your appointment.

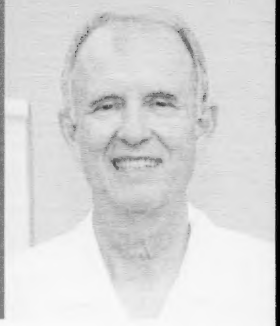
The service is free and can be found at:

https://medxpress.faa.gov/



ATTENTION:
As of Oct. 1, 2012, pilots must now use MedXpress to apply for a Medical Certificate.

Ask Medical Certification



Q: I hold a third-class medical with a private pilot certificate (Airplane Single Engine Land) and IFR rating. A few months ago I had a stress EKG (electrocardiogram) which showed a series of extra beats which were originally interpreted as ventricular. I was cathed on the next day and my coronary arteries were normal. I was referred to an electrophysiologist who arranged a 30-day Holter monitor. This showed no abnormality. Repeat EKGs have been normal. Review of the stress EKG by the electrophysiologist showed that I had premature atrial contractions at that time, but they have not recurred. I am on no medications and am very active physically. I have had a repeat stress EKG which is normal. What information do I need to have ready for my next third-class medical?

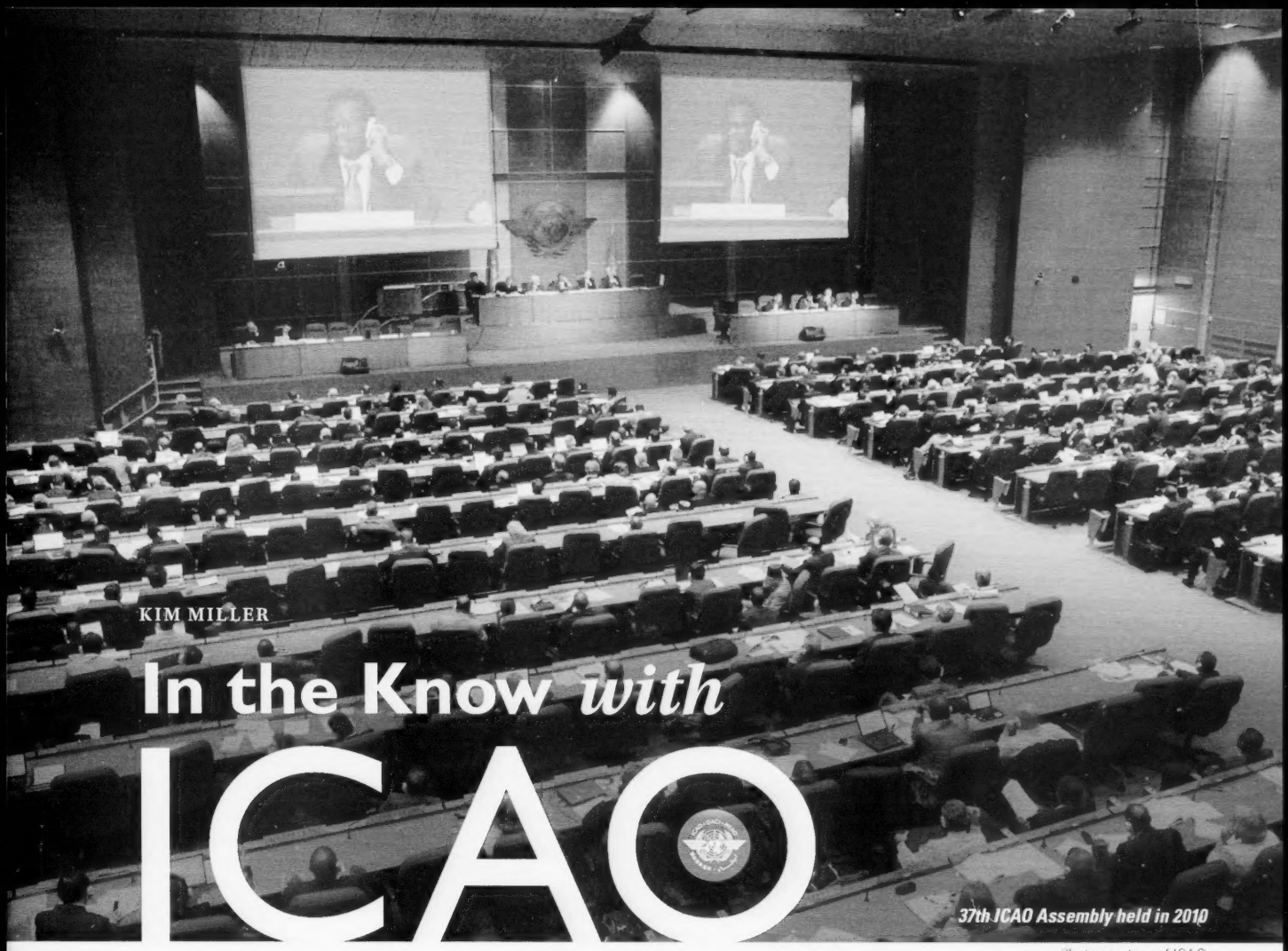
A: Extra heart beats, particularly of ventricular origin, may be a sign of serious heart disease or may be fairly benign. Further testing is usually warranted to determine which is the case. Once the testing has been done, if the extra beats are proven to be benign, we do not generally require further follow-up. In your case, it seems that you had a very thorough workup and your treating physicians are satisfied. At the time of your medical examination you should bring a copy of the original abnormal stress EKG, including the tracings, a copy of the cath report, a copy of the 30-day Holter monitor report, a copy of the report by the electrophysiologist, and a copy of your latest stress EKG with the tracings. This material should be entered into your case file as documentation that your problem is benign. You should not require Special Issuance for these conditions and your AME should be able to simply explain this in his/her portion of the physical, submit the documentation with the examination, and issue you your medical certificate at the time of the examination, providing there are no other conditions that would prohibit this.

Send your questions to SafetyBriefing@faa.gov. We'll forward them to the Aerospace Medical Certification Division without your name and publish the answer in an upcoming issue.

Q: I recently received my third-class medical certificate on my way to becoming a student pilot. During the process, the FAA wanted details on a recent incidence of basal cell carcinoma, a non-metastasizing (but malignant) form of skin cancer that is generally very treatable with outpatient surgery, without need for radiation or chemotherapy. This is my third incidence in 20 years (I seem to get one every 10 years or so).
After getting a letter from my physician, the certificate was issued, but the FAA asked to be notified if there is a recurrence. This surprised me. What is it about this type of skin cancer that would pose a risk to general aviation? I can't see how having a basal cell carcinoma would prevent someone from flying an airplane safely.

A: It is our general practice in aeromedical certification to ask an airman to notify us if they have recurrence of a disease or condition that is of some concern to us. You are correct in stating that basal cell cancers do not ordinarily pose a risk to flying safety. However, it may not have been clear to the person who reviewed your case as to which type of skin cancer this was. Some skin cancers, specifically melanoma and sometimes squamous cell, may be very hazardous to aviation.

Dr. Courtney Scott is the Manager of the Aerospace Medical Certification Division in Oklahoma City, Okla. He is board certified in aerospace medicine and has extensive practice experience in civilian, and both military and non-military government settings.



37th ICAO Assembly held in 2010

Photo courtesy of ICAO

KIM MILLER

In the Know *with* ICAO

An Inside Look at the International Civil Aviation Organization

Back in the Day Bliss

It is amazing how general aviation has progressed since the early 1970s. In my time, general aviation activities have become increasingly sophisticated due to several things, including the use of more advanced aircraft manufacturing techniques, avionics, navigation, instrumentation, and powerplant systems. When I started my career as an aviation maintenance technician almost 40 years ago, things were pretty simple. If you had dual comm radios and VORs in your airplane, you were pretty much good to go. I was fortunate to start my career at a small family-owned Fixed Based Operator (FBO) in Northern Illinois. I fondly remember the shirt tails hanging on the office wall from those who soloed, my GA friends in the community, the annual pilgrimage to Oshkosh, and the fly-ins at the airport with the great pancake breakfast.

At that time, the FBO offered aircraft rentals, flight instruction, and aircraft maintenance, and performed commercial charters under 14 CFR Part 135. I can still recall the process of loading a Piper Cherokee Six with gear for the fishing charters to Canada. I knew little (as did everyone else) about the international history and obligations established a mere 90 miles away that enabled those flights.

"Eye-Kay-Ohhh?"

Now, you probably recognize and understand how the FAA sets standards, issues certifications on the basis of those standards, and conducts surveillance to assure continued operational safety in the National Airspace System (NAS). You might even go so far as to assume that other countries have their own organizations to perform these functions for their nations. You would be right. Canada's "FAA" is called Transport Canada Civil Aviation. Germany has the *Luftfahrt-Bundesamt*, which roughly translates into the Federal Aviation Office. And in Australia, the Civil Aviation Safety Authority is their regulating office.

So with all this in mind, it should be easy to recognize the value of a greater, global organization whose vision it is to achieve safe, secure, and sustainable development of civil aviation. That is just what ICAO does.

What? Don't know too much about it? Well here is a chance to brush up on your knowledge of the International Civil Aviation Organization, (most commonly shortened to the phonetically pleasing "eye-kay-oh").

WHO (are these guys?)

The International Civil Aviation Organization is a specialized agency of the United Nations and is a conglomeration of 191 member States that serves as the forum for cooperation in all fields of civil aviation. The organization is comprised of three branches:

- The Assembly, which maintains a representative from each State and establishes policy through standards and recommended practices (*see sidebar on page 12*);
- The Council, made up of 36 States and serving as the governing body for the organization; and
- The Secretariat, headed by a Secretary General and organized into five divisions.

The Assembly consists of representation from each of the established members and, at certain times, from non-member States such as Vatican City. The list is fluid, as new members can be added once they have a presence in the aviation arena. The newly established State of the Republic of South Sudan formally joined as recently as late 2011 to become ICAO's 191st member.

The Assembly meets every three years, and is convened by the Council. The last session was number 37 and was held in Montréal in 2010. One of the major outcomes from that session was the establishment of a framework for alternative fuel use and the creation of a carbon dioxide standard for all aircraft. Starting to sound familiar?

The 36-member Council is the governing body of the Assembly. Its members are elected every three years. It is divided into three major parts to ensure equal and quality representation for all. Part I includes States typically considered to be of great aeronautical significance and major players in air transport. The United States, the Russian Federation, Japan, and Brazil are a few examples. Part II includes States that have made the largest contributions to providing international facilities. Examples include Spain, Singapore, and Saudi Arabia. Lastly, Part III members ensure geographical representation among the voting Council. This section includes Cuba, the Republic of Korea, and Uganda, to name a few. The Council has numerous functions, including submitting annual reports to the Assembly, carrying out Assembly directives, and providing administrative oversight for ICAO finances. The president of the Council is also elected every three years. Mexico's Roberto Kobeh González is the current Council president.

As mentioned before, The Secretariat consists of five divisions. The most important thing to know about this arm of ICAO is that it provides administrative and service functions for its divisions and for ICAO as a whole. For anyone who has worked in the federal government, this office is something akin to a plans and programs section.

WHEN (were they formed?)

ICAO got its start back in 1944, when the United States decided to hold a conference in order to discuss pertinent issues in civil aviation. These issues arose from the booming growth of air travel, with more routes crossing international lines. This was due largely in part to the advancements in aviation driven by World War II.

The first convention was held in Chicago, Illinois, and invitations were sent to 55 U.S. allies or neutral party States who were considered to be aviation pioneers. Fifty-two States attended. The focus of this "Convention on International Civil Aviation,"

Photo courtesy of ICAO

Chicago Conference of 1944

or "Chicago Convention," as it was known then, was to discuss the lack of concessions granted to foreign airlines, as well as the lack of established agreements permitting foreign planes to enter, transit and exit another's airspace. In addition, the convention laid the foundation for a set of rules and regulations regarding internationally recognized air navigation symbols, which was the catalyst for the common air navigation system throughout the world.

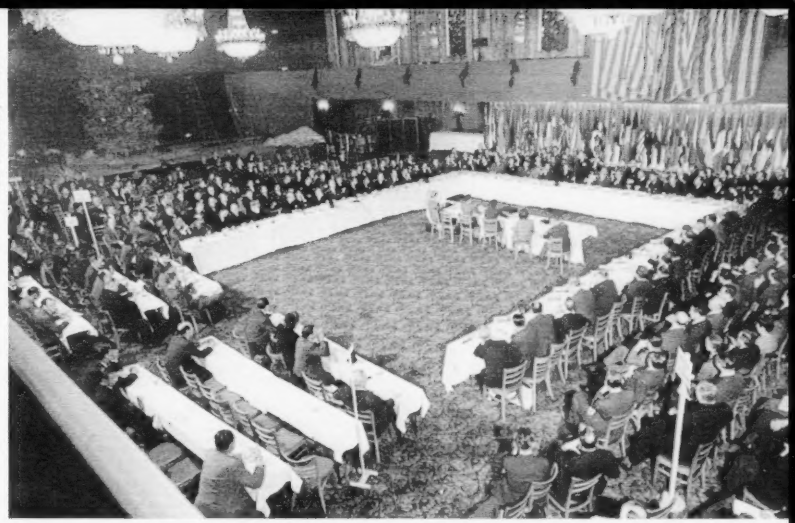
By the end of the convention, the foundation and constitution for the modern day ICAO had been laid out and, pending the 26 votes that were required for ratification, the Provisional International Civil Aviation Organization (PICAO) was established. PICAO functioned for roughly two years until the doctrines were ratified on March 5, 1947. They went into effect April 4, 1947, which is the official "birthday" of the International Civil Aviation Organization. The Convention document is a legally binding international treaty that establishes the international rules relating to airspace, aircraft registration, and safety. It details the rights of the signatories in relation to air travel. It is presently comprised of 96 Articles, and is published in four different languages: English, French, Spanish, and Russian.

WHAT (do they do?)

Today, ICAO is responsible for ensuring that all of its States are working in similar terms of aviation safety and security. The organization is responsible for codifying the principles and techniques of international air navigation, and for fostering the planning and development of international air transport to ensure safe and orderly growth. ICAO regularly amends the content of the 18 annexes that contain standards and recommended practices supporting the Convention (*see sidebar on page 12*), and routinely discusses and develops rules for several areas, including personnel licensing, aircraft operation, airworthiness, air navigation, and border-crossing procedures for international civil aviation.

ICAO defines a *standard* as any specification necessary for the safety or regularity of international air navigation and to which members will conform in accordance with the Convention. In other words, a standard is mandatory. ICAO defines a *recommended practice* as any specification that is considered desirable in the best interests of international air navigation and to which contracting States will do their best to conform. A recommended practice is "highly encouraged," but still voluntary in nature.

Photo courtesy of ICAO



Chicago Conference of 1944

Here's an example of how ICAO standards and recommended practices affect the United States. As you know, the FAA recently changed its terminology for directing an operator to "taxi into position and hold" (TIPH). This common ATC command wasn't as easy for visiting international aviators to understand, and therefore introduced unnecessary risk. Thus the new instruction, "line up and wait," or LUAW, was voted upon via the ICAO forum, and the verbiage was changed. The FAA followed suit, as did every other member nation where this terminology was not already used.

ICAO does have a process regarding differences between the ICAO standards and the national legislation/regulations of each State. Under Article 38 of the Convention, a State can file a "difference." The recognition of differences is done at the country-to-country level, however in some cases, a U.S. difference to a standard won't be recognized by other States.

In addition to establishing regulations, ICAO defines the protocols for air accident investigations on a global level. This may not seem like such a big deal for U.S. owned and operated aircraft on U.S. soil, but should an accident occur in Germany involving an American-contracted aircraft flown by an American pilot with Dutch, Brazilian, and South African passengers on board ... well, you get the idea that establishing jurisdiction can be tricky.

WHERE (are they located?)

ICAO headquarters is located in the city of Montréal, in Quebec, Canada. In addition, there are several extensions of ICAO (similar to the FAA's Flight Standards District Offices, or FSDOs), breaking the world up into seven regions. Some regions that might interest you are the European and North Atlantic (EUR/NAT) region, whose office is located in Paris, France, and the North American, Central American, and Caribbean (NACC) region, which is located in Mexico City, Mexico.

WHY (should you care, anyway?)

In today's global aviation construct, an airplane takes off or lands every few seconds somewhere on the face of the Earth. That is 24 hours a day, 365 days of the year, and general aviation is a big chunk of that. In order to take your beautiful Cessna 172 up to Ottawa for a little pike fishing, you have to be ICAO-compliant. Period. Otherwise you could be "stopped at the border," so to speak, and prohibited from entering international airspace. Or worse, you could get to where you want to go and then find yourself stuck on that end and restricted from flying back!

In some cases, the issue may have to do with results of the physical inspection of your aircraft. Other civil aviation authorities can perform a ramp inspection on you and your aircraft, private, corporate, or commercial, under Article 16 of the Convention. The main purpose of such inspections is to determine your compliance with the applicable international safety standards while you are operating in their sovereign airspace. Also, as a part of your flight preparation, you need to be aware of the differences filed by the United States and the State to which you are going. These are available at various locations, including the back of each respective Annex document and the Aeronautical Information Publication (AIP) of each State.

ICAO establishes the standards by which all civil aviation authorities measure and make concessions for one another. Other States have a right to expect your compliance. In the United States, we follow the regulations provided to us by the FAA, but the fact of the matter is that these standards don't mean much when you want to fly to or around Nassau, Bahamas. Nor do Bahamian regulations have jurisdiction here in the United States. That country has to have buy-in when it comes to what standards they might allow. They do this through ICAO. *We* do this through ICAO.

As I understand it, the FBO in Northern Illinois is still there under the management of the same family. It is doing well, having grown into a much larger operation with an attached airpark. In addition to domestic GA, they have also acquired an executive jet charter operation that has the capability to conduct both domestic and international operations. While that old Cherokee Six may be long gone, the new blood in the terminal and the new iron on the ramp still have obligations to ensure that proper international civil aviation operational requirements are met.

Kim Miller is the manager of the International Technical Support Branch. He works in the Flight Standards Service's International Programs and Policy Division, facilitating assessments of other civil aviation authorities for compliance with international standards, and related technical assistance worldwide. He is a licensed aviation maintenance technician and pilot. Contributing to this article was Sabrina Woods, assistant editor for the FAA Safety Briefing.

Eighteen Annexes of ICAO

Several of the 18 Annexes have materials regarding international operations of GA aircraft, be they private or corporate and cover a wide assortment of topics. Annex 1 deals with personnel licensing. Annex 2 is rules of the air. Annex 6-Part II is for GA airplanes and Part III is for helicopters. And Annex 8 relates to continued aircraft airworthiness. More information can be found at the ICAO website under documents, or at www.icao.int/Documents/annexes_booklet.pdf .

The Annexes of ICAO presently in use are:

1. Personnel Licensing
2. Rules of the Air
3. Meteorological Service for International Air Navigation
4. Aeronautical Charts
5. Units of Measurement to be used in Air and Ground Operations
6. Operation of Aircraft
7. Aircraft Nationality and Registration Marks
8. Airworthiness of Aircraft
9. Facilitation
10. Aeronautical Telecommunications
11. Air Traffic Services
12. Search and Rescue
13. Aircraft Accident and Incident Investigation
14. Aerodromes
15. Aeronautical Information Services
16. Environmental Protection
17. Security: Safeguarding International Civil Aviation against Acts of Unlawful Interference
18. The Safe Transport of Dangerous Goods by Air

JAMES WILLIAMS

Is My Ticket Good There?

The Ins and Outs of Overseas Flying

Have you ever been on vacation and thought, "This would be a cool place to go flying." If you are here in the United States, you need only find an FBO and get a check out, assuming you're current in terms of a flight review and medical requirements.

But what if you aren't in the United States?

If you're outside the boundaries of the U.S. National Airspace System (NAS), you've stepped into the wider world of international aviation. It's a world governed by the International Civil Aviation Organization (ICAO), bilateral aviation safety agreements, treaties, and more. There's a lot that you can do with a U.S. pilot certificate in other countries, but it's important to fully understand both the privileges and the limitations.

First things first. There is a big distinction between flying your N-registered (U.S. registered) aircraft to a foreign country and flying around there, and flying a locally registered aircraft while you're in another country. For more information on flying a U.S. aircraft to another country see "Let's Go Island Hopping" on page 16. Although this article specifically covers the Caribbean, many of the principles it outlines are similar elsewhere.

While the above distinction may sound trivial, it is actually quite important. Other nations generally don't concern themselves much with your pilot and medical certificates if you are flying your own aircraft, so long as your certificates conform to ICAO standards. But in order to fly a locally registered aircraft, the requirements may be different.

"It Depends"

Like most aspects of dealing with a law or regulation, the answer to the "can I fly there?" question is a resounding "it depends." It depends on which country you want to fly to, what that country's requirements are, and whether or not the FAA has any specific agreements with that country (more on that below).

In terms of worldwide applicability, ICAO recommends that:

> *A pilot license issued by a Contracting State should be rendered valid by other Contracting States for use in private flights.*

Unlike ICAO standards, which carry more weight and require a difference to be filed with ICAO if the authority wishes to deviate, an ICAO recommendation is just that — a recommendation. Some countries adhere to recommendations; others do not. But take notice of a key point in the ICAO recommendation: "private flights." Most countries require that you hold a locally-issued certificate or license, just as the FAA does in 14 CFR section 61.3. This regulation states that in order to serve as a required crew member of a civil aircraft of the U.S. (i.e., to fly any N-registered aircraft), you must have a pilot certificate, or a special purpose pilot authorization, issued under 14 CFR part 61.

In the United States, the FAA uses 14 CFR section 61.75 to allow a foreign pilot to fly an N-registered civil aircraft. Assuming that the foreign pilot is from an

ICAO member country that meets ICAO standards, this section allows the FAA to issue a U.S. pilot certificate to a foreign-licensed pilot on the basis of the foreign license. The catch is that this certificate is limited to the private pilot level. Even if the foreign pilot's certificate is at the ATP level, the U.S. pilot certificate issued to facilitate private flights (per the ICAO recommendation quoted above) is limited to the private pilot level. With the U.S. private pilot certificate in hand, the foreign-licensed pilot can fly an N-registered aircraft in the United States. Like any private pilot, he or she cannot fly for compensation or hire. Part 61.77 covers special purpose pilot authorizations which allows foreign pilots to fly N-registered aircraft for compensation or hire with certain restrictions but this is beyond the scope of this article.

The answer to the "can I fly there" question depends on which country, that country's requirements, and whether the FAA has any specific agreements with that country.

There are a few other important points to know. First, the foreign pilot has to meet the currency, flight review, and medical certificate requirements of the certificate, just as any other private pilot would have to do. But unlike a U.S.-certificated private pilot, the foreign pilot has most likely not just taken a practical test that would meet the flight review and basic currency requirements. In most cases, this limitation is not a significant barrier, because most FBOs or flight schools require any unknown pilot to have an aircraft checkout before renting an aircraft. Since checkouts do not necessarily qualify as a flight review, the foreign pilot will need to be sure that the instructor is aware of the need and conducts the checkout in a way that meets flight review requirements.

Another point to remember is that a U.S. pilot certificate issued under 14 CFR section 61.75 is only valid as long as the underlying foreign license remains valid.

Although you always need to check individual country requirements, many ICAO countries have similar policies. A small sampling:

Australia: A pilot visiting Australia may apply for a Special Pilot Licence (Australian spelling) based on the overseas pilot certificate. Bear in mind, though, that Australia's Civil Aviation Safety Authority (CASA) may need several months to process such a request. For short-term operations, CASA also allows a Certificate of Validation, which enables operations for less than three months.

United Kingdom: Like the FAA, the U.K.'s Civil Aviation Authority (CAA) regulations (the Air Navigation Order, or ANO of 2009) has a provision similar to our own 14 CFR section 61.3. Under Part 6, Flight Crew Licensing – Requirements for Licence, Article 50 (1) states:

> *Subject to the exceptions set out in articles 51 to 60, a person must not act as a member of the flight crew of an aircraft registered in the United Kingdom without holding an appropriate licence granted or rendered valid under this Order.*

Article 62, "Deeming a Non-United Kingdom Flight Crew Licence Valid," is the U.K.'s version of the FAA's 14 CFR section 61.75. Article 62 (1) recognizes flight crew licenses issued by a Contracting State [of ICAO], and Article 62 (2) states:

> *Subject to paragraph (4), for the purposes of this Part, such a licence is, unless the CAA gives a direction to the contrary, deemed to be a licence rendered valid under this Order.*

While this provision allows an FAA-issued pilot certificate to meet the requirements under Article 50, Article 62 (4) states that:

> *A licence deemed valid under paragraph (2) does not entitle the holder —*
>
> *(a) to act as a member of the flight crew of any aircraft flying for the purpose of commercial air transport, public transport or aerial work or on any flight for which the holder receives remuneration for services as a member of the flight crew; or*
>
> *(b) in the case of a pilot's licence, to act as pilot of any aircraft flying in controlled airspace in circumstances requiring compliance with the Instrument Flight Rules or to give any instruction in flying.*

As you can see, the U.K.'s paragraph (a) is similar to our own 14 CFR section 61.75 with respect to issuance of a private pilot certificate. Note, however, that paragraph (b) restricts a foreign pilot from flying in controlled airspace in instrument meteorological conditions (IMC), and prohibits the holder from giving flight instruction. Also U.K. regulations are scheduled to change in April of 2014 as part of EASA harmonization so please check before your departure.

The IPL Approach

Since most pilots seeking to fly in a foreign country are likely to need only private pilot privileges, restrictions such as those described above are not a significant impediment. There is, however, the

potential for additional privileges — without additional testing — in countries where the United States has specific agreements with a foreign government. Canada currently is the only example.

As part of a larger Bilateral Aviation Safety Agreement (BASA), in 2006 the FAA and Transport Canada Civil Aviation (TCCA) initiated a new pilot licensing agreement as part of an Implementing Procedure for Licensing (IPL). The IPL allows U.S. pilots to be issued Canadian licenses, and vice versa. But unlike pilot certificates issued pursuant to 14 CFR section 61.75, these certificates may be issued at the commercial and ATP levels, although the pilot must take a knowledge test. Also, unlike a certificate issued under 14 CFR section 61.75, certificates issued in accordance with the IPL are "stand-alone" certificates (i.e., validity is not linked to that of the foreign pilot certificate).

As you might imagine, the process of developing and negotiating an IPL is lengthy and complex, because each regulating authority has to ensure that the other country's pilot certification standards provide the equivalent level of safety and competence. To the extent that resources permit, the FAA is interested in expanding the IPL approach with like-minded civil aviation authorities.

Tips for Trips

If flying abroad is something that interests you, check ahead. Some countries, like Australia, require advance paperwork. Others, like the U.K., do not. Some countries allow commercial operations with varying degrees of paperwork. Others do not allow any kind of commercial operations on the basis of foreign certificates. Consequently, the first step is to check with the CAA in the country you plan to visit.

As you can see, flying a locally-registered GA airplane isn't that difficult. It just takes a little advance planning ... an effort could provide the experience of a life time.

For More Information:

Civil Aviation Safety Authority (Australia):
http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_90024

Civil Aviation Authority (UK):
http://www.caa.co.uk/default.aspx?catid=175&pagetype=70&gid=2083&faqid=1189

Number of Active GA Aircraft

(Source – GAMA 2011 GA Statistical Databook and Industry Outlook)

U.S.-certificated pilots

(includes total of private, commercial, and ATP certificates)

INDIA	4,271
CHINA	2,838
JAPAN	2,566
GERMANY	2,376
U.K.	2,309

(Source: FAA Airmen Certification Branch)

Photos courtesy of the Bahamas Ministry of Tourism

A seaplane lands near the Exumas in the Bahamas.

TOM HOFFMANN

Let's Go Island Hopping

How to Turn Your Caribbean Dreams into Reality

Just picture it. Relaxing in the warm glow of the sun, a gentle breeze blows across your face. And with your toes dug down into powdery smooth sand, you let the rhythmic drone of ocean waves and island beats invoke a sense of inner calm and peace.

Ah, yes, the Caribbean. Where the turquoise waters sparkle and the laid-back pace of life attracts visitors from all over the globe. But if the thought of endless security lines, misconnected luggage, and deadline-driven cruise ship itineraries tend to bring your travel plans to a screeching halt, think again. With a pilot certificate in your pocket, this exotic locale may not be as hard to reach as you think. True, you'll need some planning and prep work, but a flight to the Caribbean is certainly achievable — on your terms, at your pace, and with your own plane. On top of that, the sense of accomplishment that comes with this type of trip can be a reward in itself.

Getting Started

Several common questions come to mind for pilots considering a trip to the Caribbean. How difficult is the paperwork? Will I be able to find fuel? Can my airplane even make the trip? While there are a few important items to consider before your flight to ensure your safety and the safety of any passengers, they should in no way impede your ability to enjoy this jewel of a destination. And, oh yes, it may also help to know that even a modestly equipped Cessna 172 can easily make a trip to just about anywhere in the Caribbean.

Depending where you originate, the hardest part of a Caribbean journey may very well be the flight to Florida. Variables like weather, terrain, and airspace restrictions can often be more of a challenge here in the United States.

The next hardest part might be deciding where to go. From Florida, your destinations include everywhere from the Bimini Islands in the Bahamas, less than 50 miles off the coast, to Oranjestad, Aruba, just north of Venezuelan coast. In between you'll find more than 130 different exotic spots to park your plane, 60 of which are in the Bahamas alone. So, whether you're looking for a place to sport fish, scuba-dive, or just relax on a quiet beach, you'll be sure to find something that fits your taste.

Keep in mind that airport restrictions, hours of operation, and landing/exit fees can vary among Caribbean nations, so be sure to check for any special requirements before you leave. If you're thinking of a trip to Jamaica or the Cayman Islands for example, you'll need to obtain a Cuban overflight permit to transit their airspace. And if the Bahamas is on your radar, you must first land at one of the nation's 20 Airports of Entry. However, once you clear Customs there, you are free to island hop the country's 100,000 square miles without having to file additional flight plans.

Your destination research should also include checking the official tourism websites of the countries you plan to visit, many of which have specific information on private flying policies (e.g., www.bahamasaviator.com). Another good place to get your bearings on country-specific travel requirements is the International Flight Information Manual available at www.faa.gov/air_traffic/publications/ifim/. (See this issue's Checklist department on page 27 for more)

What's Required?

Once you've narrowed down the options of where to go, let the planning begin! Although specific equipment requirements may vary between different Caribbean nations, there are several basic items both you and your aircraft will need when traveling in this area.

What you need:

- Passport(s) — each occupant must have one
- Pilot Certificate
- Medical Certificate
- FCC Radio Telephone Operator's Permit and Radio Station License for your aircraft. (Both are rarely asked for, but nonetheless, requirements — see www.fcc.gov/forms for more information)
- Aircraft registration
- Cash and credit cards — it's good to have both options for airport fees and fuel, but realize cash is king in these areas

What your airplane needs:

- 12 inch registration lettering
- U.S. Customs decal — currently $27.50 and you can buy one online at https://dtops.cbp.dhs.gov/ (a copy of your online invoice will suffice)
- Radio and Mode C Transponder (406 MHz ELTs not required)
- One Coast Guard approved life jacket per occupant. Life rafts are suggested, but not required. You can rent both vests and rafts from several FBOs in southern Florida.

Also check that your insurance policy extends to your planned destination. It is not required, but it may be a good idea to bring a copy of your policy with you.

View from Magens Bay on St. Thomas, U.S. Virgin Islands

Photos courtesy of the Bahamas Ministry of Tourism

Stella Maris Airport, Long Island Bahamas

What's The Plan?

"I understand how first-time Caribbean flyers may be somewhat leery of extended overwater flying," says Jim Parker, an official Bahamas Flying Ambassador and owner of Caribbean Flying Adventures. But with more than 10 years of island aviating experience, Parker says there's really nothing to fear. "Land is almost always in sight in the Caribbean," he says. "Airplanes are within gliding distance of land 95 percent of the time between Florida and Puerto Rico thanks to the 700 islands in the Bahamas."

That's a fact easily confirmed — and hopefully a fear easily assuaged — when reviewing the Low Altitude Enroute IFR and World Aeronautical Charts (WAC), both available at www.faa.gov/air_traffic/flight_info/aeronav. Try Google maps too, for aerial satellite views of your proposed route. You'll also want to review the appropriate airport information for your destination, like landing distances, runway configurations, approach procedures, radio frequencies, Customs hours, and fuel availability. Don't forget about alternates too, even though weather is rarely an issue in the Caribbean.

A flight to the Caribbean is certainly achievable — on your terms, at your pace, and with your own plane.

That's not to say weather shouldn't also be an important part of your planning process. Hurricane season runs for half the year (June 1 to November 30) and can bring some unexpected and often violent changes in the weather. While you're planning, keep an eye out for activity in the tropics that could affect you. A good site to check is http://weather.noaa.gov/international.html. Wind shear is a dangerous phenomenon best avoided, and is also common in these parts, so make sure your crosswind landings are up to par before you start your island hopping. Carrying some extra airspeed on approach might also help with shifty winds.

Don't Sweat the Paperwork

Before your flight, there are a few bits of paperwork, much of which can be completed electronically. First, you'll need to complete an electronic Advanced Passenger Information System (eAPIS) manifest (http://eapis.cbp.dhs.gov), a web-based U.S. Customs and Border Protection tool that captures crew, passenger, and flight information for international travel. If you've never used the system, you'll need to enroll first. This information can be submitted far in advance, but no later than one hour prior to departing United States or re-entering from a foreign location. If you're sure of your dates, you can file your return eAPIS before you even leave the United States. Otherwise, you can always file multiple return requests.

An international flight plan (FAA Form 7233-4) is also required when departing from and returning to the U.S. The specialists at 800-WX-BRIEF can help walk you through the whole flight plan. When calling, ask for "briefer," "Florida," then "southern Flor-

Can I Fly to the Bahamas with a Sport Pilot certificate?

U.S. Sport Pilot requesting to operate in The Islands of the Bahamas under the U.S. Sport Pilot rules (14 CFR part 61, subpart J) must meet the following requirements:

- Hold a current and valid U.S. driver's license or a minimum of a third class medical certificate.
- A logbook endorsement certifying the pilot is proficient in accordance with the requirements listed in 14 CFR section 61.325 (a), (b), and (c).
- A logbook endorsement certifying the pilot is authorized to perform cross country flight.
- Operate within the requirements of the Sport Pilot privileges and limitations listed in 14 CFR section 61.315.

Additional information can be found at http://www.bahamas.com/bahamas/light-sport-aircraft-approval.

ida." For more help with flight plan filing, and eAPIS manifest filing, try using www.fltplan.com or reference the Aeronautical Information Manual (AIM) section 5-1-9 (www.faa.gov/air_traffic/publications/ATpubs/AIM/aim0501.html). AOPA also has a free eAPIS course at http://flash.aopa.org/asf/eAPIS/.

You will need to present a General Declarations form (or Gen Dec) upon arrival at your destination, often in triplicate. To expedite this process, some countries, like Aruba, allow you to email the Gen Dec ahead of time. Finally, immigration cards are available after you land, often located in the terminal or FBO. There may be different or additional forms if you are visiting more than one airport within the country.

On the day of your departure, activate your flight plan before leaving Florida. If you fly VFR, you can contact Miami Center for flight following and a discrete squawk code. Be sure close your flight plan in the air prior to landing at your destination, or else with 800-WX-BRIEF on the ground. Then it's just a matter of clearing customs before you kick off your shoes and enjoy the many exciting delights the Caribbean has to offer.

Darn, Do I Have to Leave?

Since nothing good lasts forever, you will eventually need to know how to make your way back to the United States. Once you've shaken all the sand out of your clothes, you'll want to load up, refuel, and start on your return leg. Check the departure procedures in place at your airport, which usually entail settling any parking or departure fees and submitting additional Gen Dec forms to Customs and Immigration officials. File an eAPIS manifest, an international flight plan, and make sure you notify U.S. Customs of your arrival time at least one hour before you land. There are several airport options in southeast Florida with U.S. Customs that are well-suited for GA operations.

Unless you're on an IFR flight plan, you'll need to get a discrete squawk code before penetrating the Air Defense Identification Zone (ADIZ) just west of Bimini. After landing, be sure to close a VFR flight plan if you haven't done so already. Then grab your luggage, queue up for Customs with your passports, and you'll soon be free to continue to your final destination.

$100 Mahi-Mahi Burger

If this article has inspired you to start searching for your bathing suit and flip-flops, be sure to heed some important safety factors first. According to Jeffrey Smith, a previous Florida-based commercial pilot and instructor, and now FAA's Manager of Airmen Certification and Training for General Aviation, a good way to prepare for a Caribbean jaunt is to spend some time with a flight instructor who's familiar with this type of flying. "A test run with an experienced CFI can help you brush up on emergency procedures and build confidence before you go it alone," says Smith. You can also try reaching out to one of the many Bahamas Flying Ambassadors at www.flyingambassador.com, or catch one of the several FAA Safety Team seminars on Caribbean flying held each year at airshows and events.

A trip to the Caribbean may at first seem a bit out of reach for some, but after reviewing what's involved, you'll soon see it can be both a fun and educational flying adventure, with plenty of good resources to help you along the way. So what are you waiting for? Your $100 Mahi-Mahi burger awaits!

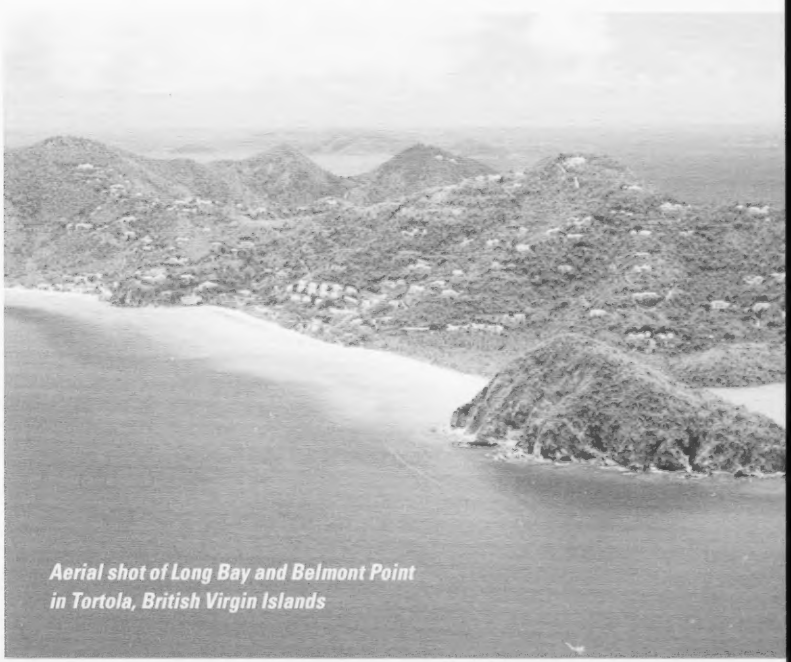
Tom Hoffmann is the managing editor of FAA Safety Briefing. *He is a commercial pilot and holds an A&P certificate.*

Learn More

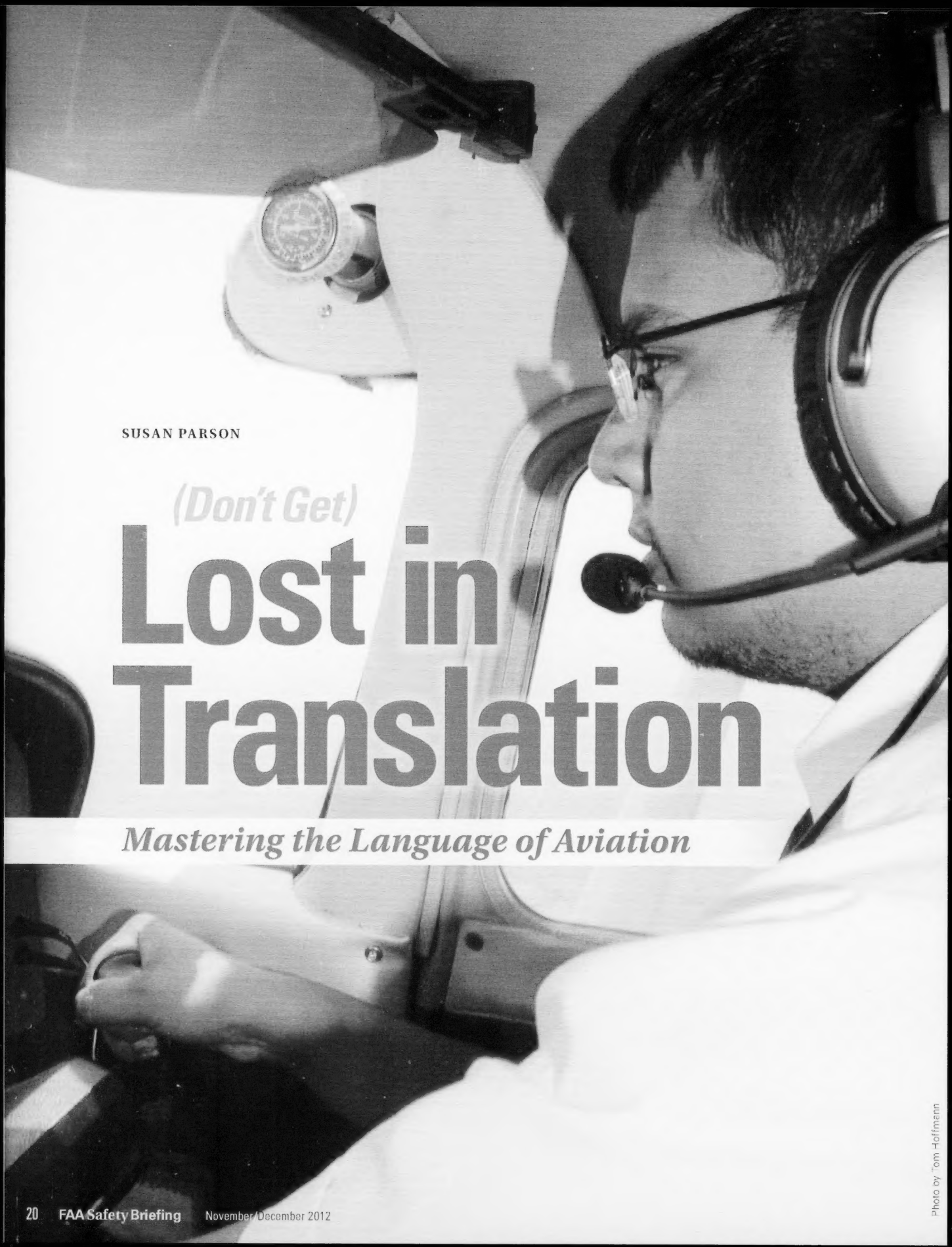
International Flying Overview
http://www.faa.gov/air_traffic/publications/ifim/intl_overview/

Caribbean Flying Adventures
www.CaribbeanFlyingAdventures.com

Pilot's Checklist for Entering Bahamas
www.bahamas.com/bahamas/enter



Aerial shot of Long Bay and Belmont Point in Tortola, British Virgin Islands



SUSAN PARSON

(Don't Get) Lost in Translation

Mastering the Language of Aviation

Photo by Tom Hoffmann

Though the quote is sometimes attributed to Winston Churchill, playwright George Bernard Shaw generally gets credit for the deft observation that "England and America are two countries divided by a common language." Shaw was of course referring to the way that the same word — "biscuit," for instance — can conjure a cookie in the mind of a Briton but bring breakfast to mind for an American.

The wonder and woe of language, though, is that even two people from the same cultural background — or a single household — can hear the same word or phrase and reach a different conclusion as to its meaning. A case in point is the phrase, "language of aviation." Some will instantly think it refers to English as being the ICAO-prescribed official language of global aviation. Others will think first of the peculiar jargon unique to our preferred pastime. Both meanings are accurate, and both have important implications for the subject at hand: Ensuring that aviation-related communication is clear enough for both sender and receiver to have an identical understanding of its meaning.

Common Language — Part 1

In little more than a generation, aviation spread from its humble beginnings on the wind-swept sands of America's Kitty Hawk to the wind, sand, and stars of Saint-Exupéry's African Sahara airmail routes and far beyond. It quickly became clear to aviators that safety and common sense required a global language for such an inherently global activity.

English owes its selection as that language not to logic, but rather to historical circumstance. At the time the 52 nations who founded the International Civil Aviation Organization (ICAO) first convened in Chicago in 1944, WWII had devastated many countries' industrial capacity — including aviation manufacturing and operations. ICAO made English the official *lingua franca* of global aviation primarily because English-speaking countries dominated not only the era's flight operations, but also the design, development, and manufacture of commercial aircraft. Although there was (and still is) no prohibition on the use of the local language(s) in domestic airspace, ICAO's 1951 adoption of English as the official language for aviation guaranteed — sort of — that English language capability would be available for all international flights.

There is a significant difference between a relatively limited set of technical aviation terms and true language fluency and proficiency, especially in a language as rich, nuanced, and complex as English.

Why the qualifier? Until January 2008, ICAO's standards and recommended procedures (SARPs) required only that aviation personnel in contact with international flight operations master a set of words and phrases known as "ICAO Radio Telephony Phraseology." As you might imagine, though, there is a significant difference between a relatively limited set of technical aviation terms and true language fluency and proficiency, especially in a language as large, nuanced, and complex as English.

Though native speakers have the luxury of a lifetime's exposure, the complexities and quirks of English make its mastery a daunting prospect. Consider these facts:

- Along with its rich vocabulary of more than 171,000 words, English has a wealth of

Who's Roger, and Why Do Pilots Talk So Much About Him?

If it isn't true, it ought to be. Ever wonder why aviators say "roger?" A very plausible explanation arises from aviation's early days, when the emerging industry adopted customs, procedures, and terms from more established industries.

One such industry was the telegraph business, which of course operated in Morse code. Given the uncertain quality and reliability of such transmissions, standard procedure upon successful receipt of a message was for the receiver to transmit a single letter — "R" — to signify that "I have received and understood your last transmission."

Voice communications being similarly subject to garbles, early aviators and their ground-bound interlocutors needed a similar protocol. As it was not possible to transmit a Morse-coded "R," they did the next best thing by transmitting the word "roger," which was at that time the spelling (phonetic) alphabet version of the letter "R." Then, as now, it was simply an acknowledgement that "I have received and understood your last transmission."

So now you know. And "R" you not grateful that aviation adopted this practice before the phonetic alphabet "R" changed from "roger" to "romeo?"

irregular (and, most would agree, illogical) spellings and grammatical constructions.

- Nearly 1,500 English words with the same spelling have different pronunciations, grammatical functions, and meanings (e.g., "close" is an adjective in "close call," and a verb in "close your flight plan").
- Around 8,000 English words have the same pronunciation, but with very different spellings and meanings. A common aviation example — an area rife for aeronautical misunderstanding — involves "to," "too," and "two."
- English has nearly 40 dialects, and that doesn't even begin to account for the wide variety of regional accents that can confound and confuse even a native speaker.
- Idiomatic expressions can be baffling, to say the least. For instance, how can "fat chance" and "slim chance" mean the same thing? Or, as another Internet example observes, how is it that skating on thin ice can get you into hot water?

Complete mastery of such highly nuanced complexity is neither realistic nor necessary for aviation safety. Still, the presence of miscommunication due to lack of English proficiency as a probable cause or contributing factor in so many of the world's aviation accident investigation reports led ICAO to make an important amendment to Annex 1 (Personnel Licensing). Starting in January 2008, ICAO required that all air traffic controllers and flight crew members who are engaged in, or in contact with, international flights be proficient in English as a "general spoken medium" as well as in any other language(s) used by the ground station(s) involved in a given flight operation. ICAO defines the required English proficiency as Level 4, which means that the speaker not only possesses a specified level of vocabulary and grammatical knowledge, but also demonstrates skills in pronunciation, word stress, rhythm, and intonation that are sufficient for clear and efficient communication.

Imagine how much more challenging that must be for a non-native English speaker, who must master not only one of the world's more complicated languages, but also the highly specialized Airplane dialect.

Although ICAO leaves it up to its individual contracting states to determine how such proficiency is determined, airman certificates are expected to indicate the results. In the United States, 14 CFR stipulates that the ability to read, speak, write, and understand the English language is a basic eligibility requirement for an FAA airman certificate. Since the examiner cannot issue a certificate unless the applicant clearly meets this requirement, the FAA does not require any additional assessment of English language skills. To comply with ICAO requirements, though, airman certificates issued since 2008 include a notation with the words "English proficient."

Photo by Tom Hoffmann

Common Language — Part 2

Now that we've established English language proficiency as the baseline, let's talk about the second meaning of the "language of aviation" phrase. Think back for a moment to the first time you listened to an aeronautical radio frequency.

English is my native tongue, and I like to joke that I also speak French, Spanish, (rusty) Bengali, and three dialects of "Guy." But on the day of my first flight lesson, none of that linguistic experience helped me make sense of the static-filled gibberish flowing from the little Cessna's tired comm radios into my shiny new aviation headset. When I could occasionally discern a few individual words, I recognized them as belonging to the English language vocabulary. Overall, though, the words, phrases, rhythms, and cadences were completely foreign to me. I'm sure my primary flight instructor still chuckles at the memory of my wide-eyed deer-in-the-headlights reaction to that first exposure to the language of "Airplane." For my part, I remember all too well the time and dedicated effort it required for me first to understand, then to speak, this strange new dialect. As with learning any language, there were many misunderstandings along the way,

International "Spelling Alphabets"

According to some sources, the International Telecommunications Union (ITU) created the world's first spelling alphabet, which is a more accurate term for what most of us call the "phonetic" alphabet. The initial version was used from 1927 until 1932 when, with changes made to improve functionality, it was also adopted by the International Commission for Air Navigation (one of ICAO's predecessor organizations).

The 1932 spelling alphabet consisted of the following:

Amsterdam Baltimore Casablanca Denmark Edison Florida Gallipoli Havana Italia Jerusalem Kilogramme Liverpool Madagascar New York Oslo Paris Quebec Roma Santiago Tripoli Upsala Valencia Washington Xanthippe Yokohama Zurich.

In 1941, the United States began using the Joint Army/Navy Phonetic Alphabet, which was more commonly known as the "Able Baker" version. Its terms were as follows:

Able Baker Charlie Dog Easy Fox George How Item Jig King Love Mike Nan Oboe Peter Queen Roger Sugar Tare Uncle Victor William X-ray Yoke Zebra

Several other domestic and international variants (e.g., Latin America's "Ana Brazil" spelling alphabet) were used in this era, with lessons learned with respect to global functionality and understandability. In November 1955, ICAO provided a recording of its proposed Radiotelephony Spelling Alphabet to all member states for testing, and adopted the final version for aeronautical use in March 1956:

Alpha Bravo Charlie Delta Echo Foxtrot Golf Hotel India Juliett Kilo Lima Mike November Oscar Papa Quebec Romeo Sierra Tango Uniform Victor Whiskey X-ray Yankee Zulu

and I have rueful memories of the way I fumbled, mumbled, and stumbled through my earliest efforts to speak Airplane. I can only guess at the number of controllers I confounded.

Now imagine how much more challenging that must be for a non-native English speaker. Such pilots have truly earned my admiration and respect, since they must master not only one of the world's more complicated languages, English, but also the highly specialized Airplane dialect.

Simple, you say? Not so fast, and certainly not so simple. There are now more than 1,300 terms in the FAA's 80-page Pilot-Controller Glossary (P-CG), which also lists nearly 50 terms whose use in the U.S. National Airspace System (NAS) differs from the official ICAO definition. The number of abbreviations and acronyms takes the total to around 2,000 words, phrases, or terms that the pilot is expected to correctly understand, and that in an environment that includes aircraft noise, multi-tasking, and what I will politely call less-than-perfect aeronautical radios. When you pause to ponder that overall picture, it's a minor miracle that miscommunication is no more common than it is.

So, how can you use this information to improve aviation safety? Regardless of where you fly, remember that you may be sharing the airspace — and the radio frequency — with pilots who speak English as a second language. There are several things you can do to give them a helping hand and enhance safety for everyone.

- First, always try to speak as clearly, concisely, and precisely as you can.
- Efficiency counts, but remember that you aren't in a speed-speaking contest with our fast-talking friends in ATC. A reasonable pace takes less radio time than a repeated need for "say again" requests on either side of the mic.
- Finally, make it a point of personal pride to sound like a professional. That means mastering the content of the Pilot-Controller Glossary, and avoiding non-standard terminology. For instance, don't "take the runway," and please, please, *please* banish the word "active" from your aeronautical vocabulary. Transmitting your intentions with respect to "the active" without providing a runway number leaves your fellow fliers in the dark as to which runway is in use, and your position relative to that runway.

As virtually every foreign pilot will tell you, the level of freedom afforded to private and recreational fliers in the U.S. NAS is unmatched elsewhere in the world. Let's ensure that every part of our flying behavior, including use of correct English and aviation terminology, helps us keep it that way.

Susan Parson (susan.parson@faa.gov, or @avi8rix for Twitter fans) is editor of FAA Safety Briefing. She is an active general aviation pilot and flight instructor.

Photo courtesy of Tom Hoffmann

SABRINA WOODS

A LICENSE TO SKILL

Opportunities Abound for AMTs

The Problem

There has been quite a bit of speculation about the coming years of aviation and how the demand for commercial operators won't meet the supply available. Pilots in general aviation might not have been paying close attention to the projected numbers involved, but it might surprise you to find out that the problem extends to aviation mechanics as well — and this shortage could hit you right in the toolbox. While some of us have an A&P certificate, and are thus authorized to perform work on our own aircraft, the rest of us have to rely on aviation maintenance technicians (AMTs) to provide service.

According to the 2012 Boeing Pilot and Technician Outlook, an expected 92,500 *additional* AMTs will be needed by 2031 in order to meet the demand in the industry. These, however, are only North American numbers. Globally, the numbers climb toward 601,100.

The International Civil Aviation Organization (ICAO) reports global numbers a bit differently. It takes into account how many AMTs are needed overall (1,164,969), and factors in natural attrition rates along with the available capacity to train those that are new. ICAO projects a world-wide shortage of around 18,000 training slots, with only North America actually being able to meet its own training demand. This is all based on the notion that the available (and needed) slots to meet the requirement are filled to begin with.

To break it down a bit more, currently there are approximately 223,000 active general aviation aircraft flying around in the United States with almost 70 percent of that being of the single-engine variety. Currently there are 145,000 FAA-certified AMTs in the U.S. If you do the math, this means there are approximately 1 1/2 AMTs available for every GA aircraft out there. These are today's numbers, which, incidentally, are on a divergent path from one another as we progress into the future. Worse, the aircraft totals *do not* include commercial aircraft.

The Background

You might wonder how we got to this point. I can sum that up in just one word: EVOLUTION. The "baby boomer" class of the 1950s and early 1960s is evolving (i.e., getting older) and retiring from the work force, or leaving it to go onto other things. This is the generation that witnessed the aviation industry grow exponentially in the post- World War II era, when ex-military pilots and training aircraft were abundant and cheap. This is the generation that

currently supplies the bulk of our aviation maintenance population.

Conversely, fewer high school graduates are entering the industry. This situation is attributed to many different reasons, such as lack of interest in a field where all careers have lost some of the allure and grandeur they once held. Another reason is lack of awareness.

Next, the industry is evolving. More and more countries are taking to the air and fledgling newcomers to aviation are emerging, particularly in Asia. As these countries develop, the demand for technicians grows too. Furthermore, as aircraft get flashier and more advanced, trouble-shooting has evolved to become an onboard self-diagnosing computer printout. This is great for progress, however it further reduces opportunities to learn "old school" repair methods for older models.

You might not be alarmed yet because you have that trusty ol' technician who has been turnin' wrenches and kickin' tires since 1956, and who knows just about everything there is to know about your vintage Luscombe Model 8. He has diligently fixed every leak, beep, squeak and even that pesky oil consumption problem that gave you fits for weeks. He has been with you every step of the way since you bought and restored that old classic. His new assistant is a 24-year-old AMT student who has six months and 300 credit hours left until he is awarded his entry-level certifications. He means well, but his skill, wealth of knowledge, and experience are limited. The problem is that as much as your old guy loves his job, he is looking to retire next year leaving you in the capable (!) hands of the assistant. Not only is the experience starting to retire, the remaining workforce that is in place doesn't yet have the skills to make up for the loss.

John Allen, Director FAA Flight Standards Service, penned in his proposal, "*United States Aviation Academy Program: A Vision for Expanding the Cadre of Qualified Professional Pilots and AMTs*," that "this skills gap will have significant repercussions on the U.S. economy and is not something we can quickly reverse."

In short, new AMTs will need time to evolve in order to learn and hone the skills necessary to succeed in their craft.

The Fix

The fix is deceptively simple: Get more people into aviation maintenance! Currently, this is a three-pronged concept that encompasses: (a) generating more entry-level interest, (b) making the education and training process more accessible; and (c) recruiting laymen from venues such as the military and other technical vocations.

First up is generating interest, or, getting new rears in old seats, so to speak. Many people have approached this issue from many different directions, but some of the best feedback has been from the programs specifically geared towards high-school age students. While EAA's AirVenture Oshkosh boasts entertainment for all ages, the KidVenture's "Walk in my Boots" immersion, spearheaded by dedicated FAA employees such as Tony Janco, a senior advisor for the Aircraft Maintenance Division, informs students about the opportunities available in the world of aviation maintenance and gives them the chance to get some hands-on experience. Under this program, students learn new skills like how to read wiring diagrams, work with the structure of the aircraft, examine "consumables" such as brake pads, oil, and fuel filters, as well as disassemble and reassemble the aircraft's powerplant. Volunteers assist school-aged, technically-oriented students in performing enough hands-on maintenance to be awarded two hours of credit towards the A&P curriculum.

The fix is to get more people into aviation maintenance! Currently, this is a three-pronged approach that involves: (a) generating more entry-level interest, (b) making the education and training process more accessible; and (c) recruiting laymen from venues such as the military and other technical vocations.

"The program is incredibly well received," said Janco, who is currently working on sharing this idea with various FAA repair stations, and the local high schools within those communities. And it isn't just the kids getting into it — companies who have a vested interest in building the next generation of technicians, and current AMTs eager to share their profession, are getting involved. Some companies are opening their doors for tours to children as young as middle school age. The hope is that this builds the bridge to enrollment in vocational or community college programs that lead to an Associate's degree with an A&P certificate. In seven years, Janco has seen the KidVenture venue grow from peddle-car airplanes and bottle rockets,

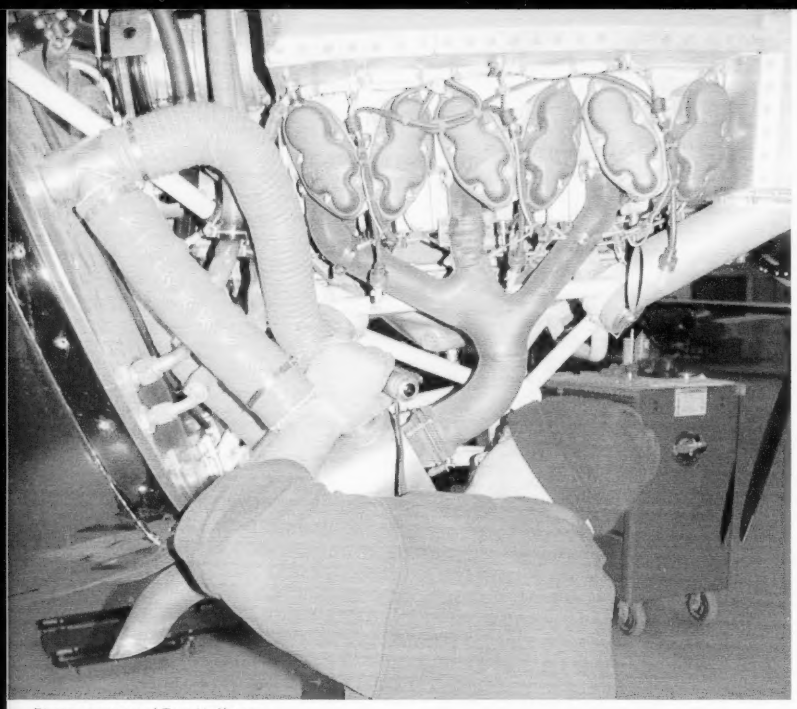


Photo courtesy of Tom Hoffmann

to working mockups and rebuilds. His only concern is that "it's sad that some kids might not be aware of the opportunities [in aviation maintenance] out there for them."

Dale Forton is president of the Professional Aviation Maintenance Association (PAMA), an organization dedicated to promoting professionalism while educating, representing, and supporting AMTs, and is intimately familiar with the decline in AMT numbers. He believes, however, that the youth programs, immersions, and tours are a great step in what will help reignite interest in the career field. "Great opportunities are in front of them (technicians) — around the world and in the United States. There is a need and they are a wanted commodity," said Forton.

The future is bright for young technicians; however, the fix doesn't just stop there. GA pilots who have working knowledge and dabble in their own aircraft maintenance are encouraged to make strides towards obtaining an A&P certificate. As one old adage goes, "the best place to find a helping hand is at the end of your own arm." Therefore, the next step in the fix is to bolster 14 CFR Part 147 maintenance school attendance.

Currently the United States boasts some outstanding aviation maintenance schools and if you check out Tom Hoffmann's article, "So You Want to be an Aircraft Mechanic?" from the May/June 2011 Nuts, Bolts and Electrons department of the *FAA Safety Briefing*, it gives you much more insight into the process. The quick sum-up is that applicants must obtain 1,900 hours of specialized training and pass three separate written, oral, and practical exams to earn an A&P certificate.

Recently, the FAA has been discussing ways to alleviate some of the time and expense of becoming certificated. Because changing the rules can be difficult, the FAA, in conjunction with such agencies as PAMA, the Aviation Technician Education Counsel (ATEC), and the National Business Aviation Association, is looking at more innovative ideas for making the certification process a little bit easier. Ideas include:

- Creating and issuing credit for distance and online learning so that students can learn at their own pace or set their own schedule around their daily lives
- Breaking up the test taking process, thereby spreading the costs of the tests over time and allowing for more expedient intervention if a student isn't progressing within standards
- Modifying the entire curriculum to better align with current technological focuses (i.e., less metal work and more composite materials or avionics)

The last tier in the fix is wooing ex-military AMTs and other skilled technicians from other vocations. A program is already in place to tailor the Part 147 curriculum by evaluating the skill level of the military member, and awarding credit for what they have already done, thus providing a smoother (and faster) route to certification.

Today's maintenance schools boast high post-graduation placement rates and with an A&P certificate in their back pocket, the average newbie is looking at placement in a host of career fields ranging from general aviation, to commercial and charter airlines.

For the GA operator, this certificate ensures you will always have someone (yourself) to fall back on to help out when life throws those hydraulic disc brake leaks and oil pump seizures at you.

For veterans or defectors from other technical vocations, this certificate could be a ticket to a new and refreshing career. Aviation maintenance remains a viable and dynamic career choice for anyone who thinks troubleshooting faulty signal relays or repacking engines sounds like total bliss, and where the art of painstakingly restoring vintage aircraft to their full glory is a wonderful day well spent. Both of these opportunities exist — you just need your license to skill.

Sabrina Woods is an assistant editor for the FAA Safety Briefing. *She spent 12 years in the active duty Air Force where she served as an aircraft maintenance officer and an aviation safety mishap investigator.*

SUSAN PARSON

Checklist

The IFIM: WIFFM?

The advent of the Internet and mobile technology has put a wealth of flight planning resources right at your fingertips — literally. If you're planning a flight outside the United States, one of the resources to review and bookmark for ready reference is the International Flight Information Manual, or IFIM, which is available on the FAA website (*see URL below*).

If you're wondering what's in it for *me* (WIFFM), the IFIM — once printed and made available in paper format — is an online preflight and planning guide intended for use by U.S. non-scheduled operators, business fliers, and private aviators flying outside of the United States. The IFIM also offers planning guidance for international flights entering, exiting, and operating in the U.S. airspace. An International Flying Overview section offers information on a range of topics that pilots must consider and research when planning a flight outside U.S. airspace. The IFIM strives to provide this information in a format that is easy-to-read, download, and print. It also includes contact information for foreign civil aviation authorities and aeronautical information services, plus hyperlinks to information sources suggested for additional research.

Know Before You Go

As stated in the IFIM's online introduction, there are many differences that pilots need to be aware of when flying outside the U.S. To learn about such differences, pilots need to consult the appropriate country's official Aeronautical Information Publication (AIP), a document that defines and describes its airspace, aeronautical facilities and services, and national rules and practices pertaining to air traffic. A fundamental point is that while ICAO standards prevail, some member states (including the U.S.) do note differences with ICAO SARPs in their official AIPs.

Although the IFIM provides some AIP information from a number of countries, it stresses that the FAA cannot guarantee the accuracy and currency of information for all countries listed in its pages. For this reason, pilots should use the IFIM contact information to check directly with a given country's aviation authority to get the most up-to-date version of its AIP, thus ensuring the acquisition of the most complete and current information.

International Preflight Checklist

The IFIM also includes a suggested international preflight checklist. Although some items may not pertain to every flight, pilots should at least consider each element to determine its potential applicability to the planned flight.

If you have experience in international GA flying, we'd love to hear your suggestions and recommendations for best practices. Write us (SafetyBriefing@faa.gov) and we'll publish the top tips in a future issue.

The IFIM is an online preflight and planning guide intended for use by U.S. non-scheduled operators, business fliers, and private aviators flying outside of the United States.

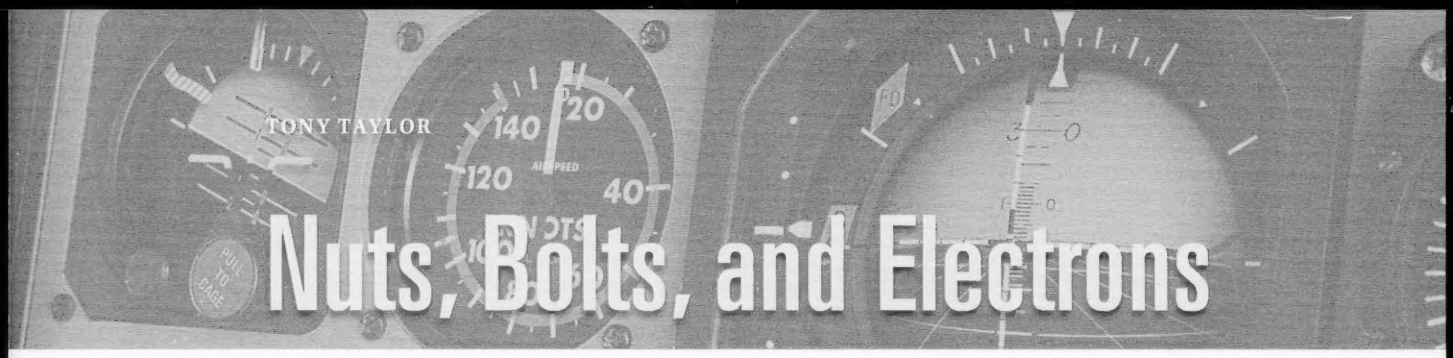
Susan Parson (susan.parson@faa.gov, or @avi8rix for Twitter fans) is editor of FAA Safety Briefing. *She is an active general aviation pilot and flight instructor.*

Learn More

International Flight Information Manual
http://www.faa.gov/air_traffic/publications/ifim/

U.S. Aeronautical Information Publication (AIP)
http://www.faa.gov/air_traffic/publications/atpubs/AIP/aip.pdf

AC 91-70A - Oceanic and International Operations
This advisory circular (AC) contains general information and guidance for operators planning oceanic flights, including authorizations needed for operations outside the continental U.S.
http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC%2091-70A.pdf



TONY TAYLOR

Nuts, Bolts, and Electrons

Do You Know Where Your Parts Are Coming From?

I was repairing some cylinders from a Continental C-85 engine, and I had to replace two of the exhaust seats, which cost about $22 each. After I returned the cylinders, the owner sent me a package containing two seats. His enclosed note said he found "the exact same seats" from a "west coast supplier" for $5 apiece, and he wanted me to accept those instead and return his $44.

The seats he sent me were clearly unapproved parts. The machine work was bad. There were no markings, and the color of the material told me it was not the correct alloy for the job it was intended to perform. I returned them with a letter explaining that they were unapproved, poorly made, and would probably fail way short of their usual lifespan. I questioned whether the owner felt his (or anyone's) life was worth the $34 difference!

A Bit of History

Forty years ago, aircraft manufacturing and parts companies produced about 90 percent of their components within their own factories. Now, most only produce about five percent of their parts on site. These companies have become "assemblers" of components that have been produced by external suppliers.

This practice lowers costs because the manufacturers, called Production Approval Holders (PAH), contract with specialized companies that can build products faster and cheaper. With proper oversight and a robust quality control program, PAHs can develop a list of suppliers who consistently produce parts that meet their approved design, as required by 14 CFR. Supplier control audits, which became a requirement in 2011, help determine if PAHs are providing the correct technical and quality information to their suppliers.

Trust but Verify

Ronald Reagan once said to trust but verify, and it's a great bit of wisdom. When a new supplier ships parts to a PAH for the first time, the PAH does a thorough job of inspecting those parts to ensure they meet the approved design. A history of compliance is established. PAHs can perform on-site audits and inspections of the supplier, and have the supplier provide a Certificate of Conformance stating that the parts meet all of the requirements. If there are no problems after several delivery inspections, the inspection rate can gradually be decreased.

The FAA has developed a category parts list which assigns a "criticality score" to certain types of parts, because, as you might guess, a landing light lens is less critical than a high pressure turbine disk. Those parts deemed "Critical to Flight Safety" require stricter auditing.

Aircraft parts that don't meet design and cannot be reworked are scrapped. When this happens, regulations require that the part be rendered unusable. Quite often, this process is contracted out. Without proper oversight, it's not too much of a stretch to envision some of these scrap parts being cleaned up, repackaged, and sold via your favorite online auction venue. That's how unapproved parts are born.

How Do You Know?

So how do you know if you're buying a certified part? If you don't do your own maintenance, know your mechanic. If you don't, then get recommendations or research one online. Only do business with those who come highly recommended and have an established history of ethical, quality work.

If you do your own maintenance, the cost of the parts can be very telling. Legitimate parts companies do a lot of market research on their competitors. The point is to keep prices low and fairly consistent. If you find a company selling a particular part at 50 percent less than everyone else, *caveat emptor*, as they say. BUYER BEWARE!

If the deal sounds too good to be true, it probably is. And it's definitely not worth your life.

Tony Taylor is a manufacturing Aviation Safety Inspector working in the San Antonio Manufacturing Inspection District Office. He has 32 years experience as a mechanic and machinist in both the aircraft manufacturing and maintenance fields. Taylor oversees manufacturing facilities and designees in Texas and Louisiana.

TOM HOFFMANN

Angle of Attack

"Assembled" On Site

Kit Association Takes Off at Air Venture

While many folks attending EAA AirVenture this year were busy ogling polished spinners and squeaky-clean cockpits — or perhaps just seeking refuge from the scorching sun — something pretty unique took place within the world of general aviation safety. Inside the Sonex Aircraft hangar on the east side of Wittman Regional Airport, a group of 14 pilots, technicians, and part manufacturers, all with a devout passion for aviation, met to discuss ways to improve safety within the experimental amateur-built (E-AB) aircraft community. This segment of GA continues to grow in size and popularity, but with a safety record that has caused some concern. And with that initial gathering, the Aircraft Kit Industry Association (AKIA) was born.

During that inaugural AKIA meeting, members achieved consensus on the organization's mission statement to "represent aircraft kit manufacturers, designers, suppliers, and supporters with a unified voice in the promotion and safety of the aircraft kit industry." Members also reviewed the 16 safety recommendations proposed by the National Transportation Safety Board (NTSB) in a recent safety study on E-AB aircraft. Areas identified by the NTSB for safety improvement include expanding the documentation requirements for initial aircraft airworthiness certification, improving pilots' access to transition training, ensuring that buyers of used E-AB aircraft receive necessary performance documentation, and improving aircraft identification in registry records.

The NTSB study also found that E-AB aircraft account for a disproportionate number of fatal accidents within the GA realm, with powerplant failures and loss of control issues in flight topping the list of the most common accident causes. Additionally, the NTSB discovered that a high proportion of E-AB accidents occur early in the operational life of the aircraft, and often shortly after being purchased by a subsequent owner.

"The formation of AKIA couldn't have come at a better time," said Dick VanGrunsven, AKIA president and founder of Van's Aircraft Company. "We are eager to initiate programs and activities that will address the causes of E-AB accidents and the NTSB's safety recommendations." Among those initiatives are plans to improve transition training for E-AB. "We need to standardize and expand transition training and get more involved in a wider variety of amateur-built aircraft," said VanGrunsven. "Getting the right people to work together on sharing ideas and training syllabuses can make a big difference." VanGrunsven also mentioned how encouraging the installation and use of stall warning devices and angle-of-attack indicator systems could prove to be extremely useful in stemming loss-of-control issues for E-AB aircraft.

Now an official non-profit organization, AKIA has grown to 24 members since the initial meeting in July. It includes manufacturers like Zenith, Kitfox, and Lancair. Joining VanGrunsven as part of the executive team are Sonex Aircraft founder John Monnett as vice president, and industry advocate Dave Gustafson as secretary. AKIA has also recruited the help of three prominent figures in aviation to participate on an Advisory Board: Tom Poberezny, former president of EAA and chairman for AirVenture; Frank Christensen, head of Christen Industries and founder of the modern aircraft kit movement; and Dale Klapmeier, CEO of Cirrus Aircraft.

"It is time we make our presence known and become proactive in addressing safety issues," said VanGrunsven. "If we do this right, it can be very beneficial for everyone." AKIA has already reached out to several aviation organizations and agencies, including the FAA, NTSB, EAA, and, in an effort to combine resources and promote E-AB safety. They have also started working with the Type Club Coalition to encourage and support type clubs for the wide variety of E-AB designs in the fleet and under construction. This would prove especially helpful in cases where factory support no longer exists.

AKIA membership is open to any corporation that has a vested interest in the homebuilt aircraft movement.

Tom Hoffmann is associate editor of FAA Safety Briefing. He is a commercial pilot and holds an A&P certificate.

MATT RIGSBY

Vertically Speaking

The World of Rotorcraft

Most people, even those of us in the aviation industry, just don't know much about the helicopter world aside from scoffing at the occasional over flight of their home or workplace. What we might not realize is that helicopters play an important role in not only our aviation system, but also our daily lives. And that role is increasing in its scope and scale.

When we think about helicopters, the more obvious roles are that of emergency response. Police departments use helicopters to rapidly deliver tactical officers, perform search and rescue, and to provide high level surveillance. Helicopters also prove invaluable in responding to natural disasters. In wild fire situations, like the United States has seen this summer in the west, helicopters are used extensively. Not only do they pour retardant, but even more critically, they can rapidly move firefighters and equipment to locations that in many cases are otherwise all but inaccessible. This repositioning maneuver could take hours or days on foot or by truck.

The same is true in reverse. Helicopters allow for the rapid extraction of people from dangerous situations. In the aftermath of Hurricane Katrina, the Helicopter Association International estimated that about 60,000 stranded people were rescued by nearly 700 civil and military helicopters; all without a single fatal accident. And of course on a daily basis, helicopters provide air ambulance services allowing patients to be transported to more capable facilities in the event of major injuries or illnesses.

Helicopters are also extremely effective at providing an "eye in the sky." Whether it's for the news media, civil engineers, or wildlife officials, the unique capabilities of helicopters offer some strong advantages blending visual reconnaissance and maneuverability. The following are a few examples of just that:

- Helicopters play a critical role in the delivery and maintenance of our nation's electrical power system. They are used to string and inspect power lines and help operators look for downed lines. Helicopters can even hover next to the lines, allowing a specially equipped lineman to make repairs in mid-air.
- Lumber companies depend on helicopters to help selectively harvest trees. They reduce environmental impact by eliminating the need to cut roads into forests to get the trees out. Helicopters are used in some areas for wildlife research and population control. And to combat wildfires, helicopters perform water drops to suppress the blazes.
- In the Gulf of Mexico, helicopters safely transport nearly 9,000 oil production and support workers per day. They flew 325,000 flight hours with no fatal accidents in 2011 according to the Helicopter Safety Advisory Conference.

From the time we wake up in the morning, to when we go to bed at night, helicopters stand vigil to improve our quality of life. The FAA recognizes this and as a result, the administration has recently added new positions for helicopter-only inspectors, as well as incorporated new helicopter-related training. In the broad range of helicopter operations, FAA aviation safety professionals from aircraft certification, flight standards, and air traffic continue to provide essential services to the multifaceted National Airspace System.

Matt Rigsby is a transportation industry officer and accident investigator in the FAA Rotorcraft Directorate. He is an A&P as well as a fixed and rotary wing pilot, who has worked in the helicopter community for 20 years. He has participated in more than 90 helicopter field accident investigations, both domestically and internationally.

Photo courtesy of H. Dean Chamberlain

Helicopters offer a number of unique advantages for government and civilian users.

Flight Forum

Easter Eggs

I've been using the Terminal Area Forecast (TAF) Discussion as the first thing I go to when visiting the Aviation Digital Data Services (ADDS) website (www.aviationweather.gov/adds/) for my weather information. The information here is invaluable to provide me with an overall picture of what's going to be happening in the Bay Area... something that the TAF doesn't always "predict." I really appreciate the forecaster's comments.

— Todd

We appreciate you taking the time to comment on the "Easter Eggs" column in the MayJune 2012 issue of FAA Safety Briefing magazine. It really is useful additional information and we're glad you found it helpful as well.

How to Subscribe

I love your magazine but have only been able to get a hold of it when I go to events and they have them displayed. I currently download the .pdf files and pass them about to my pilot friends and students, but I'd like to find out how I can get on the subscription to the magazine itself.

— Ron

We are glad to hear you find the magazine useful. You can subscribe to the magazine through the U.S. Government Bookstore online at http://go.usa.gov/rIgG. To view past editions or to request to receive electronic updates via email, sign up at our website www.faa.gov/news/safety_briefing.

CFI Resources

I have been a flight instructor for over a year and teaching new pilots how to analyze information and make safe decision making regarding GO/NOGO is the most challenging part of instructing. Thanks for the information provided in the Sept/Oct 2012 edition of *FAA Safety Briefing* dedicated to this subject. Here is another link I use for students.

www.langleyflyingschool.com/Pages/Cross-Country%20Navigation%20Preparation.html

— Glen

Thanks for the comments and the link. Our readers will also appreciate your sharing that information.

More for AMTs

Hello. I have been reading the Safety Briefings for a while and I noticed that it is geared toward the pilots and the aircraft. Are there any articles geared toward aircraft maintenance? It would be nice to see FAA's safety perspective dealing with aircraft maintenance.

— Terry

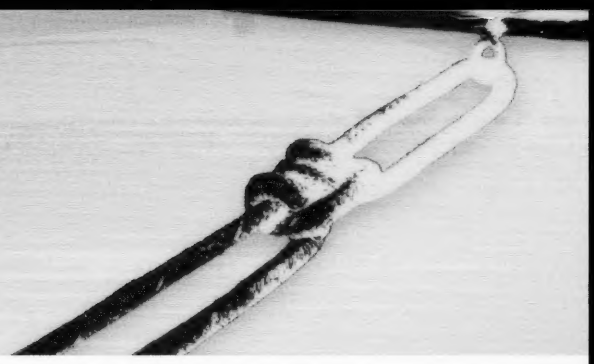
Each issue of FAA Safety Briefing includes the department Nuts, Bolts and Electrons, which will always focus on the maintenance aspect of aviation. Occasionally features, such as the one in this edition on page 24, will also highlight concerns and events in the maintenance community. Another way to keep abreast of pertinent maintenance issues is to sign up for alerts at www.faa.gov/aircraft/safety/alerts/aviation_maintenance/ . This way you will be emailed each time the document becomes available. Thanks again for reading!

FAA Safety Briefing welcomes comments. We may edit letters for style and/or length. If we have more than one letter on a topic, we will select a representative letter to publish. Because of publishing schedule, responses may not appear for several issues. While we do not print anonymous letters, we will withhold names or send personal replies upon request. If you have a concern with an immediate FAA operational issue, contact your local Flight Standards District Office or air traffic facility. Send letters to: Editor, *FAA Safety Briefing*, AFS-805, 800 Independence Avenue, SW, Washington, DC 20591, or e-mail SafetyBriefing@faa.gov.

Let us hear from you — comments, suggestions, and questions: e-mail SafetyBriefing@faa.gov or use a smartphone QR reader to go "VFR-direct" to our mailbox.

SUSAN PARSON

Postflight



A Small World After All

As I watched the cursor blink and silently bemoaned my painfully blank imagination on a topic for this column, I heard the distinctive mechanical music that heralds the arrival of the ice cream truck. And what should come up on its familiar playlist but a melody that suddenly summed it all up: *It's a Small World After All.*

The Sherman brothers, who wrote the song for Walt Disney in the aftermath of the Cuban missile crisis, probably never thought of its applicability to aviation. Even so, their simple lyrics deftly articulate some of the ideas behind our international focus in this issue. Although our theme is "*Small* Airplane, *Big* World," the process of discussing, writing, and editing the articles contained in these pages has made me realize all over again how even the smallest airplanes have a magical ability to make our big world seem smaller, cozier, and friendlier.

Even the smallest airplanes have a magical ability to make our big world seem smaller, cozier, and friendlier.

Bridging the Physical Distance

Though the mountains divide, and the oceans are wide, it's a small, small world ...

I'll never forget the first time an airliner – a Pan Am 747 *Clipper* – carried me across the Atlantic Ocean from JFK to Heathrow. What an amazing thing it was to board this behemoth, ride for a few hours through the darkness, and land in London – a whole new world to me – just as dawn was breaking. In subsequent years I have found myself on much longer flights that have taken me a lot farther and wider than New York to London. But I have never lost the sense of wonder, amazement, and awe to experience an airplane's ability to bridge in mere hours distances that once required many months, plus a lot more hazards than the inconvenience of limited legroom or misrouted luggage.

It's not just international travel that showcases the airplane's ability to bridge physical distance. To offer just a few personal examples: Airplanes enable frequent visits to Arizona, my future home state and favorite habitat for writing and specialty flying. The six-hour driving distance from northern Virginia to coastal North Carolina shrinks to two hours of flying time in my club's Cessna 182 *Skylane*, a fact that amazed and delighted family members I was ferrying northward for a brief visit. As I watched them point excitedly to landmarks they didn't expect to see quite so soon, it occurred to me that airplanes perform an amazing magic trick: they greatly expand the viewable distance while at the same time greatly reducing the time and mileage required for almost any journey.

Bridging the Cultural Distance

There's so much that we share, that it's time we're aware, it's a small world after all...

I often joke that I speak fluent "Airplane" in addition to a couple of more conventional languages, and it's true that I've managed to master aviation's technical jargon in my two decades of flying. But the language of Airplane is a lot more than just technical terms and official phraseology. Richard Bach, my all-time favorite aviation author, captured it best in a *Gift of Wings* essay called "Why You Need An Airplane...and How to Get It:"

...(T)here is a kind of principle of the sky, a spirit of flight that calls to certain among mankind as the wilderness calls to some and the sea to others.

If you are such a person, no doubt you've noticed and, I hope, enjoyed the instant bond that "airplane people" have with each other. Ours is a connection that transcends and bridges differences in language, culture, and national origin. Those who share a passion for flight also enjoy the shared culture of aviation. It is one that boasts its own language, morals, heroes, and rich traditions.

There is indeed so much that we share and it is my hope we all remain aware of, and feel blessed by, the way small airplanes can help us make the most of our time in this big world.

Susan Parson (susan.parson@faa.gov, or @avi8rix for Twitter fans) is editor of FAA Safety Briefing. She is an active general aviation pilot and flight instructor.

PAUL CIANCIOLO

FAA Faces

Christopher Barks

Manager, Office of International Affairs Western Hemisphere Team

Photo courtesy of Christopher Barks

"My interest in aviation began in a way that, sadly, is no longer possible," noted Christopher Barks, manager of the FAA Office of International Affairs Western Hemisphere team.

While on a commercial flight departing Ecuador at age five, Barks was summoned to the cockpit by the pilot and allowed to sit in the left seat. Since then, he has had the urge to fly, which eventually evolved into an interest to be a fighter pilot. After ground school and two years of Air Force ROTC, not having perfect eyesight got in the way of qualifying as a pilot. Barks still has every intention to get his pilot's license though.

"Unfortunately I have yet to begin flying lessons. I did purchase my first hour lesson, though, and keep the credit in my wallet. I plan to schedule it soon."

Barks pursued his other career passion — international affairs. He earned a bachelor's degree in international relations and German studies from the University of Minnesota and a master's degree in German and European studies from Georgetown University. He intended to go into the Foreign Service, but a call during graduation brought news of an available desk officer position in FAA's European division.

"I was thrilled! It was an opportunity to combine my love of aviation with my love of international affairs."

Barks later moved to FAA's Flight Standards Service international office and then served as the FAA senior representative in London and Brussels. He returned to Washington, D.C., last year to manage the Western Hemisphere Office — whom he advocates as "the greatest team in the FAA."

"Aviation is the only form of transportation that can literally transport you from any point on the globe to any other point on the globe. It is by definition, global. Any decision the FAA makes as a regulator or air navigation service provider has a major impact on our counterparts in other countries and with aviation at large."

The emphasis of the Office of International Affairs depends on the region of the world. Enhancing safety oversight of operators and aerodromes and interoperability are a significant focus from Canada to Chile.

"Our team has helped develop and deliver wildlife risk management programs, a regional GA safety seminar in Panama, and a major aviation partnership with Brazil."

"API aspires to make the world safer, greener, and smaller every day." — Office of International Affairs motto

The team also deals with pilot deviations and other issues concerning pilots of U.S.-registered aircraft flying outside the country.

"It is important to remember that even though the airworthiness requirements and pilot certificate follow the registry of the aircraft, you must follow the rules of the air and comply with ATC instructions of the nation within whose airspace you are operating."

Certain nations have requirements, e.g., equipment, that are not required of GA pilots in the United States And you must allow the aviation authority of the country you are in to inspect your aircraft and records.

"We continue to work with other ICAO members to promote harmonized standards so that airman and aircraft can operate seamlessly throughout the globe."

FAA is working with major international partners to develop and implement rational, scalable, and interoperable CNS/ATM enhancements — communications, navigation, surveillance, and air traffic management.

"We are working with the global regulatory community to ensure appropriate certification and oversight, and with the aviation community to promote training and implementation. We must and will do our part to ensure the development of globally harmonized technologies so that manufacturers and operators can build for, and fly in, a safe, seamless, and sustainable environment."

Paul Cianciolo is an assistant editor and the social media lead for FAA Safety Briefing. *He is a U.S. Air Force veteran, and a rated aircrew member and search and rescue team leader with the Civil Air Patrol.*

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